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INDUSTRY DAY CONFERENCE (NASA)
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COSPO/CENDI INDUSTRY DAY CONFERENCE

15 - 16 June 1995

Sponsored by

Community Open Source Program Office
and
Departments of Commerce, Energy, Defense, National
Library of Medicine and NASA

Radisson Plaza Hotel
at the
Mark Center, 5000 Seminary Road
Alexandria, Virginia

COSPO/CENDI

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**COSPO/CENDI
INDUSTRY DAY CONFERENCE**

15 June 1995

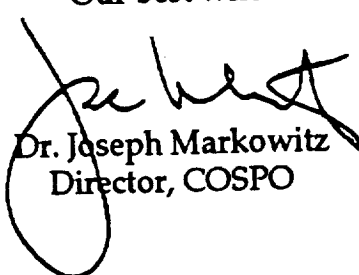
We welcome you to the joint Industry Day Conference sponsored by the Community Open Source Program Office (COSPO) and CENDI (the interagency group composed of Commerce, Energy, NASA, National Library of Medicine and Defense Information Managers).

The purpose of this conference is to provide a forum where government information managers and industry information technology experts can have an open exchange and discuss their respective needs and compare them to the available, or soon to be available, solutions.

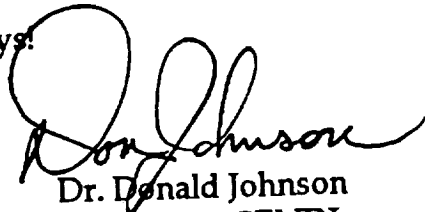
You are here because you are a government official with information management responsibilities and challenges in need of technology solutions, or you are an information technology or source provider that has solutions to offer which meet the criteria stated in the Commerce Business Daily (CBD) announcement of February 1995. We hope these two days will allow you to find matches between your requirements and capabilities.

This is the first in what we hope will be a continuing series of conferences. Consequently, it is very important that you let us know how well this conference has met your needs as well as your recommendations for future conferences. Your feedback on the Conference Critique Form will be most helpful in planning future conferences.

Our best wishes for a productive two days!



Dr. Joseph Markowitz
Director, COSPO



Dr. Donald Johnson
Chairman, CENDI

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Central Intelligence Agency
Defense Intelligence Agency
Department of Commerce
Department of Commerce - National Technical Information Service (NTIS)
Department of Defense - OSD/ASD (C3I)
Department of Defense - Defense Technical Information Center (DTIC)
Department of Energy - Office of Scientific and Technical Information (OSTI)
Department of Energy - Office of Non-Proliferation and National Security
Department of Justice - Federal Bureau of Investigation
Department of State - Bureau of Intelligence and Research (INR)
Department of the Air Force - Air Intelligence Activity
Department of the Air Force - National Air Intelligence Center
Department of the Army - Office of the Deputy Chief of Staff, Intelligence
Department of the Navy - Office of Naval Intelligence
Department of the Treasury - Intelligence Liaison Office
Foreign Broadcast Information Service (FBIS)
National Aeronautics and Space Administration
National Library of Medicine
National Security Agency (NSA)
United States Marine Corps - Marine Corps Intelligence Activity

AGENDA COSPO/CENDI Industry Day Conference

Thursday Morning 13 June 1995		Terrace Room				
7:00 - 8:30 AM		Registration & Coffee				
8:30 - 8:45 AM		Opening Administrative Remarks -- Mr. Frederick Haynes, P.E., Conference Co-Chairperson				
8:45 - 9:00 AM		Concept & Scope of the Open Source Industry Day -- Dr. Joseph Markowitz, Director of COSPO				
9:00 - 9:15 AM		CENDI Perspectives on the Open Source Industry Day -- Dr. Donald Johnson, Chairman, CENDI				
9:15 - 9:45 AM		Keynote Address -- "The Information Worker in 2005" -- Dr. Norman Winarsky, David Sarnoff Research Center				
9:45 - 11:00 AM		Refreshments in Exhibit Hall Visit Vendor Exhibits				
		SESSION 1	SESSION 2	SESSION 3	SESSION 4	SESSION 5
		Secure Products, Capabilities, Protocols, and Encryption	Information Providers	Electronic Document Management, and Publishing	Information Indexing, Discovery and Retrieval (IIDR)	Automated Language Translators
		Plaza A, Room #1	Plaza A, Room #2	Plaza A, Room #3	Terrace Room #1	Terrace Room #2
		Session Chairperson: James Wallace, COSPO	Session Chairperson: Elayne Riddle, COSPO	Session Chairperson: Kurt Molholm, DTIC	Session Chairperson: Thomas Peditke, NAIC	Session Chairperson: Alice Cranor, DIA
11:00 - 11:30 AM		Enhanced Security for Solaris 2.4 OS Argus Systems	DIALOG & Datastar Online Services Knight-Ridder	Document & Workflow Management, Advanced Text Retrieval Oracle	Massively Parallel Super Computer Text Indexing Server Cambridge Parallel Processing	English - Russian Access Innovation
11:30 - 12:00 Noon		Secure Video Conferencing AT&T	Natural Language Search, and Visualization Tools for Online Data LEXIS-NEXIS	EDMS - Electronic Document Management System Documentum	Information Retrieval Based on Pattern Matching of Text, Sound, Video Excellbur	English - Japanese Language Engineering Corp.
12:00 Noon - 1:30 PM		Networking Lunch Visit Vendor Exhibits				

AGENDA
COSPO/CENDI
Industry Day Conference

Thursday 15 June 1995				
Thursday Afternoon				
SESSION 1	SESSION 2	SESSION 3	SESSION 4	SESSION 5
Secure Products, Capabilities, Protocols, and Encryption (Continued) Plaza A, Room #1	Information Providers (Continued) Plaza A, Room #2	Electronic Document Management and Publishing (Continued) Plaza A, Room #3	Information Indexing, Discovery and Retrieval (IIDR) (Continued) Terrace Room #1	IIDR - Natural Language Capabilities Terrace Room #2 Session Chairperson: William Schultheis, COSPO
Firewalls, Secure Protocols, Secure Telecom Gemini Computer Corp.	WorldBase Search Engine Dun & Bradstreet	Infostreams, High Volume Document Imaging TRW	Object - Relational Database Management Illustra Information Tech.	Speech Recognition & NL Under- standing (HARK) & Identifinder BBN
Secure Protocols, Network Encryption	Data Pro Services	Compound Document Management	Memex Information Engine - Easy and Rapid Information Management	Advanced NL Tools (CLARIT) For Managing and Retrieving Full Text CLARITECH
Isolation Systems	McGraw-Hill/Data Pro	Xyvision	Architext - A Search & Retrieval Engine	
Access Controls, Secure Communications, Electronic Key Management	Open Source Products and Services - "We Give You the World"	Document Management - Imaging and Workflow Systems	Architext Software, Inc.	
Parallon	Library of Congress	Wang		
		Refreshments in Exhibit Hall Visit Vendor Exhibits		
Network Security, Encryption PC Guardian Security Products	Daily Electronic Feeds Oxford Analytica	Automated High Speed Forms Processor Hughes Information Technology Corp.	ConQuest - Text Retrievals with Boolean, Smart and Expert Searches ConQuest Software, Inc.	NL Information Extraction and Data Summarization SRI
SCID - Secure Communications for Voice, Data, and Fax	Live News Management Across LANS	High Performance Network Servers for Storing Electronic Documents Auspect Systems, Inc.	Information Retrieval and Dissemination Open Text Corp.	NL Retrieval System (DR-Link), Cross Language Retrieval (CINDOR) TextWise Company
Titan Corporation	Desktop Data, Inc.			
Haystack Labs' Stalker - Audit Trail Analysis for Intrusion Detection Collins Computer Consulting	First! - Full Text Current Awareness Service Individual, Inc.		Enhancing LMDS - Content-Based Text Filtering and Dissemination LOGICON	

AGENDA COSPO/CENDI Industry Day Conference

Friday 16 June 1995				
Friday Morning Plenary Session Terrace Room				
7:30 - 8:30 AM	Registration and Coffee			
8:30 - 8:45 AM	Opening Remarks -- Ms. Bonnie C. Carroll, President, Information International Association, Conference Co-Chairperson			
8:45 - 9:15 AM	INTELINK -- Frederick Harrison, Deputy Director, Intelligence Systems Secretariat (ISS)			
9:15 - 9:45 AM	National Information Strategy -- Robert Steele, President, Open Source Solutions, Inc.			
9:45 - 10:30 PM	Refreshments in Exhibit Hall Visit Vendor Exhibits			
	SESSION 1	SESSION 2	SESSION 3	SESSION 4
	Secure Products, Capabilities, Protocols and Encryption (Continued) Plaza A, Room #1	Information Providers (Continued) Plaza A, Room #2	Electronic Document Management and Publishing (Concluded) Plaza A, Room #3	Information Indexing, Discovery and Retrieval (IHDR) (Continued) Terrace Room #1
10:30 - 11:00 AM	Network Security & Mgmt Open Vision	Russian & Soviet Open Source Information East View Publications	Document Management, SGML, and The Web Information Dimensions, Inc	Hoover - An Active Information Agent SandPoint Company LLC
11:00 - 11:30 AM	Network Security Management System Raptor Systems	Sentinel - A Regional Defense Assessment Series Jane's	The Internet, the Microsoft Network, and Online Authoring Tools Microsoft	Fast Data Finder 3 Paracel
11:30 - 12:00 Noon	Secure Internet Connections TASC	Military, Politics, Global Events Worldwide Government Directories	www.MICROSOFT.COM UNDER WHA BAEV	Topic - Concept-Based Document Analysis and Retrieval Verity
12:00 Noon - 1:30 PM	Networking Lunch Visit Vendor Exhibits			
				IHDR - Advanced Technologies Terrace Room #2 Session Chairperson: Gus Hunt, OSPO Application of Visualization Technology Battelle Context Vector-Based Text Retrieval Using Neural Networks HNC Software Text-Based Intellectual Resource Mgmt Using AI Methods Information Access Systems, Inc.

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**AGENDA
COSPO/CENDI
Industry Day Conference**

Friday Afternoon				
Friday 16 June 1995	SESSION 1	SESSION 2	SESSION 3	SESSION 4
	Secure Products, Capabilities, Protocols, and Encryption (Concluded) Plaza A, Room #1	Information Providers (Concluded) Plaza A, Room #2	IIDR - Distributed Heterogeneous and Large Database Support Plaza A, Room #3	Information Indexing, Discovery and Retrieval (Concluded) Terrace Room #1
1:30 - 2:00 PM	Secure Net Server, Secure Internetting, DES Secure Computing Corp.	Socioeconomic & Scientific Data & Tools CIESIN Government Policy, Foreign Policy, Global Economy FJV, Inc.	Heterogeneous Search System, Metadata Generator SRA Navigating and Searching DHDBs Data Integration, Inc.	Session Chairperson: John Sullivan, FBI New Protocol Architecture for Information Retrieval on High Speed WANs (ATM) Architecture Tech. Corp ATM on the Desktop Madge Networks
2:00 - 2:30 PM	Internet Security: The Whole Picture From Desktop to Server SecureWare			
2:30 - 3:00 PM			Refreshments in Exhibit Hall Visit Vendor Exhibits	
3:30 - 4:00 PM	Electronic Business Coop - Secure Payment System for the Internet Spyglass, Inc.		Massive Data Storage and Compression, Searching DHDBs E-Systems, Inc.	Bandwidth on Demand Interstate Electronics Corp.
4:00 - 4:30 PM			Digital Libraries, Data Warehousing and Mining, and Parallel Databases IBM Government Systems	ATM, High Bandwidth, and Wireless Communications IBM Research
4:30 - 5:00 PM			Exhibits Remain Open Visit Vendor Exhibits	

**BIOGRAPHIES
OF
KEYNOTE SPEAKERS**

Dr. Joseph Markowitz

Dr. Donald Johnson

Dr. Norman Winarsky

Mr. Fred Harrison

Mr. Robert Steele

Dr. Joseph Markowitz
Director, Community Open Source Program Office

Dr. Markowitz received his B.A. in Mathematics and his M.A. in Psychology from Wesleyan University. He received his Ph.D. in Psychology from the University of Pennsylvania. In the course of his doctoral studies Dr. Markowitz worked on the APOLLO space program as a member of Bellcomm, Inc.

Upon completion of his studies, Dr. Markowitz was a Group Manager at Bolt Beranek Newman, Inc. as the original ARPANET was being developed there in the late 60's. At the same time, he lectured in Psychology at Northeastern University. Subsequently, he became vice president of Computer Systems for Medicine in Boston.

In the early 70's Dr. Markowitz worked and taught at MIT. As a staff member, he managed a large MULTICS-based computer research effort sponsored by the Defense Advanced Research Projects Agency. As a lecturer, he taught information systems courses in MIT's Sloan School of Management, and the School of Architecture and Planning.

Dr. Markowitz joined CIA in 1975. For the first ten years he served in the Directorate of Science and Technology, interrupted by a one year study of information handling in the Directorate of Administration. As one of two group chiefs in the DS&T's Office of Research and Development, Dr. Markowitz was responsible for: analytic methodologies, and signal and imagery processing tools; crisis management and polygraph research; and computer systems development.

In 1985, Dr. Markowitz moved to CIA's Directorate of Intelligence as Deputy Director of the Office of Current Production and Analytic Support--whose mission includes: current intelligence for senior government officials; alerting analysts and managers in the national security community; liaison with selected foreign governments; publishing all finished intelligence; and producing maps and graphics.

In the fall of 1987, Dr. Markowitz became Director of the Systems Integration Office, an Independent Office executing a Presidentially mandated mission for the Director of Central Intelligence. Dr. Markowitz served concurrently on the Intelligence Community Staff.

After four years, Dr. Markowitz became the first Director of the Technology Management Office in CIA's Directorate of Operations.

Currently, Dr. Markowitz serves as (the first) Director of the Community Open Source Program Office, which began formal operation in March, 1994 per DCID 2/12. As such he is the DCI's Program Manager and Intelligence Community Principal for open-source information activities.

Dr. Donald R. Johnson
Director
National Technical Information Service

Dr. Donald R. Johnson is the Director of the National Technical Information Service (NTIS) located in Springfield, VA. NTIS is an agency of the U.S. Department of Commerce, Technology Administration. NTIS is a unique agency of the Federal Government, in that it is self supporting, sustained only by its customers.

Prior to September 1993, Dr. Johnson served as the Director of Technology Services at the National Institute of Standards and Technology (NIST). He was responsible for NIST's business and industrial services programs.

Dr. Johnson is a native of Tacoma, Washington. He received a B.S. in Physics from the University of Puget Sound in 1960, an M.S. in Physics from the University of Idaho in 1962, and a Ph.D. in Physics from the University of Oklahoma in 1967. He has served as advisor to both state and local governments within Maryland and currently is Chair of the Board of Overseers for the Center for Advanced Research in Biotechnology. He is also a member of the American Society of Mechanical Engineers' Board of Research and Technology Development, the American Society for Testing & Materials, American Association for the Advancement of Science, and a Fellow of the American Physical Society.

Dr. Johnson has authored over 60 scientific papers and many invited talks. His professional recognition includes both Silver and Gold medals from the Department of Commerce, the Arthur S. Flemming Award, the Senior Executive Service Meritorious Award, the Presidential Rank Award of Distinguished Executives, and Department of Commerce Outstanding Volunteer Award.

Norman D. Winarsky
David Sarnoff Research Center

Norman D. Winarsky is Division Vice President of the Information Systems Laboratories at the David Sarnoff Research Center. He also serves as Director of the Information Processing Technology Program for the National Information Display Laboratory. He received the BS, MS, and Ph.D. degrees in Mathematics from the University of Chicago in 1969, 1970, and 1974, respectively, graduating Summa Cum Laude. In 1971-72, and the summers of 1973-1976, as an NSF Fellow, he attended the Institute for Advanced Study, Princeton, NJ.

Dr. Winarsky's primary interest is in the development of tools and technology that assist the human in managing the increasing "flood of digital data" -- enhancing the human's ability to understand and sort through diverse, complex types of data. He is particularly concerned with images and video as computational data types.

Dr. Winarsky has written over 25 papers in the areas of data visualization, harmonic analysis, numerical analysis, and electron optics. He has given hundreds of invited talks, lectures and presentations during his 18 year professional career at Sarnoff. He has been awarded two RCA Laboratories Outstanding Achievement Awards and the David Sarnoff Award for Outstanding Technical Achievement (RCA's highest honor) for achievements in applied mathematics and physical analysis, which led to advanced computer software for simulating electron trajectories in picture tubes.

Dr. Winarsky served as President and CEO of SENSAR, Inc., during its initial phase. He led the start-up activities in creation of the Pyramid Vision 1, the most advanced commercially available computer for developing and running computer vision algorithms for use in real-time image and video processing. SENSAR's second product, IMPRINT Mosaic, was developed to automatically provide very high quality image mosaics (large images generated by seaming together many overlapping pieces of related imagery).

Dr. Winarsky is a member of Phi Beta Kappa, Sigma Xi, the Association for Computing Machinery and the Institute for Electrical and Electronic Engineers. He is on the Board of Governors of The Consortium for Educational Process and Technology (CEPT) and the Board of Directors of SENSAR, Inc.

Frederick Harrison

Mr. Harrison is Deputy Director of the Intelligence Systems Secretariat, the operating arm of the Intelligence Systems Board (ISB) co-sponsored by the Director of Central Intelligence and the Deputy Secretary of Defense. The ISB embraces the entire US intelligence establishment, and is focused on expanding automated intelligence system interoperability. Mr. Harrison is also a senior member of the Intelligence Community Management Staff.

In previous assignments, Mr. Harrison served as Chairman, DCI Information Handling Committee (IHC); Chairman, DCI Foreign Intelligence Priorities Committee; and as National Intelligence Tasking Officer for Warning and Crisis Management. In service with the Office of Naval Intelligence, Mr. Harrison was the principal developer of the Naval Ocean Surveillance Information Center, subsequently serving as its Technical Director. He is a recipient of the Edward C. Nielsen Memorial Award, given annually for the most significant contribution to Naval Intelligence. With his IHC staff, he was awarded the National Security Agency's Frank B. Rowlett Trophy for "organizational excellence in information systems security."

Mr. Harrison is a graduate of the Baruch School of Business and Public Administration of the City College of New York. He pursued Masters and Doctoral level studies at the graduate schools of Georgetown University (Soviet Area Studies) and American University (International Relations), and is a Distinguished Graduate of the National War College. He is a member of the Senior Intelligence Service.

OPEN SOURCE SOLUTIONS Group *The Information Merchant Bank*

MR. ROBERT D. STEELE

Mr. Steele is the founding Chairman and CEO of OPEN SOURCE SOLUTIONS Group and its two affiliates, OPEN SOURCE SOLUTIONS, Inc. and OPEN SOURCES, SYSTEMS, & SERVICES, Ltd.

In the course of an eighteen year career in national and defense intelligence, Mr. Steele has served three overseas tours as a clandestine service case officer, supported covert operations, participated in strategic signal intelligence acquisition operations, helped program overhead imagery satellite resources, served as a military intelligence officer, and been the senior civilian responsible for establishing a new national intelligence production facility, the Marine Corps Intelligence Center.

Mr. Steele has since 1988 been a strong advocate for the improved exploitation of open sources, and is the originator of the phrase, "do not send a spy where a schoolboy can go". In recognition of his campaign to restructure national intelligence, better integrate private sector capabilities, and increase government and corporate utilization of open source intelligence (OSINT), he has been twice-named (in 1992 and 1994) as one of the "*Microtimes* 100: Industry leaders and unsung heroes who...helped create the future". His activities and views are discussed at length in Alvin and Heidi Toffler's latest book, *War and Anti-War: Survival at the Dawn of the 21st Century*, in the chapter on "The Future of the Spy".

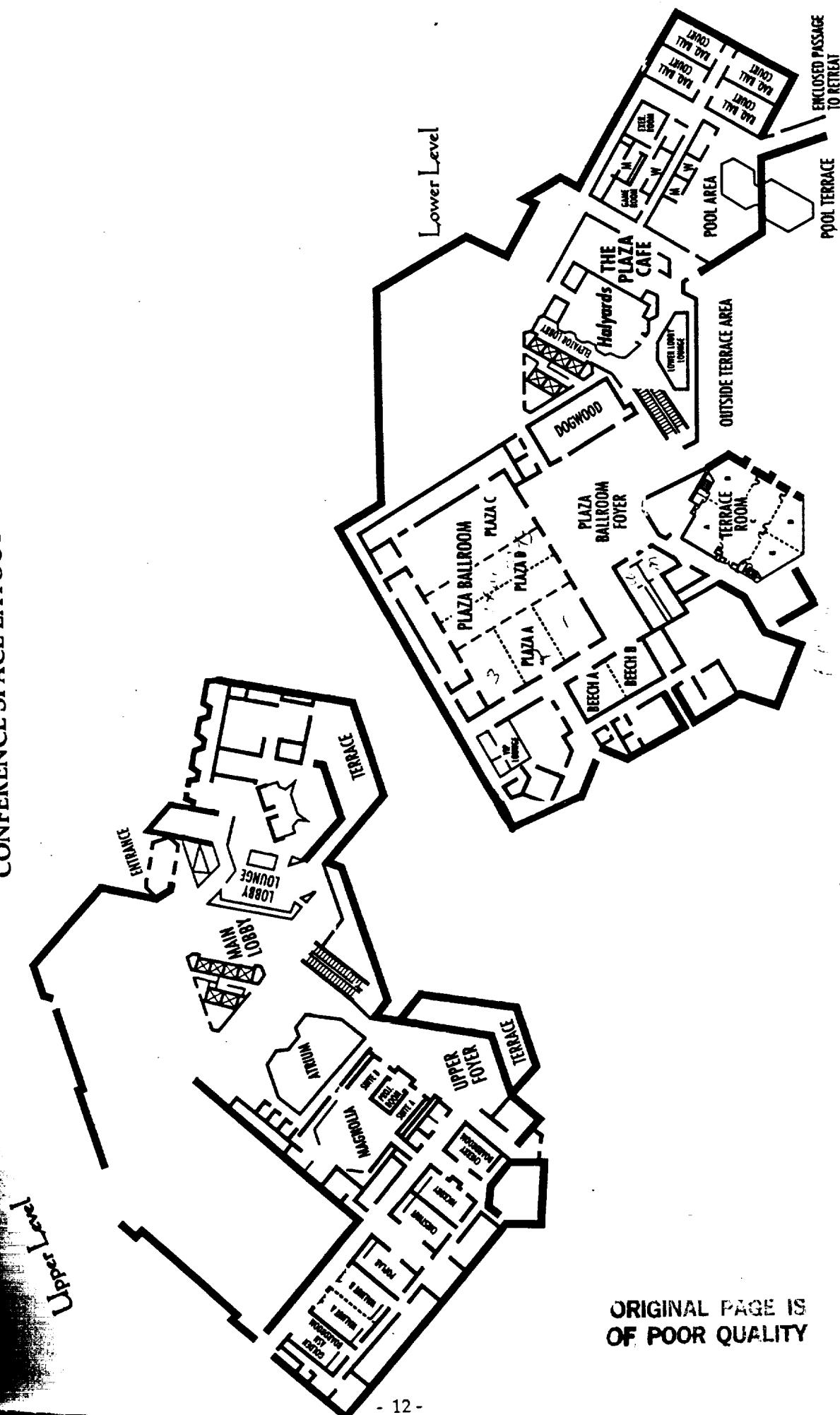
His organization sponsors the annual international symposium on "Global Security & Global Competitiveness: Open Source Solutions", publishes an international newsletter, *OSS NOTICES*, and maintains <oss.net> in cyberspace. Mr. Steele has drafted proposed legislation to establish a National Information Strategy, and contributed invited commentary to both the Aspin Commission and the Intelligence Community 2000 endeavors.

Mr. Steele holds graduate degrees in international relations and public administration, completed the Harvard Executive Program (Intelligence Policy), and is a distinguished graduate of the Naval War College. He resigned from the civil service in 1993, but remains Adjunct Faculty for Intelligence at the Marine Corps University, lectures regularly at the Joint Military Intelligence College, and supports the School of Information Warfare and Strategy of the National Defense University.

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Internet: <oss@oss.net>

**COSPO/CENDI
INDUSTRY DAY CONFERENCE
Radisson Plaza Hotel**

CONFERENCE SPACE LAYOUT



ORIGINAL PAGE IS
OF POOR QUALITY

LIST OF SESSION CHAIRPERSONS

Secure Products, Capabilities, Protocols, and Encryption -

James A. Wallace, Chief, Systems Architecture Group, COSPO

Information Providers -

Dr. P. Elayne Riddle, Chief, User Services Group, COSPO

Electronic Document Management and Publishing -

Kurt Molholm, Administrator, Defense Technical Information Center (DTIC)

Information Indexing, Discovery and Retrieval -

Thomas R. Pedtke, Associate Chief Scientist, Data Exploitation, National Air Intelligence Center (NAIC)

Automated Language Translators -

Alice T. Cranor, Open Source Program Office, Defense Intelligence Agency (DIA)

IIDR - Natural Language Capabilities -

Dr. William B. Schultheis, Senior Scientist, COSPO

IIDR - Advanced Technologies -

Ira A. (Gus) Hunt, III, Chief, Open Source Program Office, CIA

IIDR - Distributed Heterogeneous & Large Database Support -

Fred Haynes, COSPO

Communications: Speed, Bandwidth, and Wireless -

John A. Sullivan, Federal Bureau of Investigation

SESSION DESCRIPTIONS

Secure Products, Capabilities, Protocols, and Encryption

The need for secure systems, secure communications, and secure networking transactions has grown significantly over the past several years with the explosive growth of local and wide area networks, individual and corporate use of the Internet, and lower cost computer and communications equipment. This session focuses on the innovative products and services available today to support many of these needs. Topics in this session include:

- Encryption
- Internet security
- Secure protocols
- Network firewalls
- Electronic key management
- Network security management
- Audit trail analysis and intrusion detection
- Secure communications & video teleconferencing
- Enhanced security for the Solaris 2.4 operating system
- Secure payment systems for electronic commerce on the Internet

Several vendors will focus on specific secure technology areas. Other vendors will initially describe product and service offerings in one or more secure technology areas, and then review other complementary offerings.

Information Providers

Organizations throughout the U.S. Government are placing greater emphasis on the use of open source information (i.e., publicly available unclassified information such as newspapers, magazines, trade journals, conference papers, corporate annual reports, glossy product literature, radio and television broadcasts) to fill a significant portion of their information needs. This increased emphasis on the use of open source information is due in part to its availability, timeliness, and relatively low cost.

The vendors and government agencies making presentations in this session offer a wide array of information and services. Several providers will review their very focused and detailed offerings in specific subject areas (e.g., Eastern European economic data, energy data). Several providers will review their offerings across a broad array of technical areas. Additionally, a number of providers will describe their automated tool offerings that assist a user with information discovery and retrieval.

Electronic Document Management and Publishing

The explosive growth of information resources on enterprise-wide information servers and on the World Wide Web is being fueled by corporate and consumer demands for quick and easy access to pertinent and timely information. To aid in the electronic generation, storage and dissemination of information resources across a networked enterprise or the "Web," vendors are offering tools to aid information generators with data formatting and markup, storage, management, and dissemination.

This session focuses on the innovative products and services available today to assist information generators with these functions. Topics in this session include:

- document management
- document authoring tools
- automated forms processing
- text markup language editors
- high performance network servers for document storage and retrieval

Several vendors will focus on specific document management and publishing offerings, while others will describe product and service offerings in the document management and publishing area and other complementary technology areas.

Information Indexing, Discovery, and Retrieval (IIDR)

The need to store and then retrieve free-form open source information is the catalyst for the development of improved technologies in the information indexing, discovery and retrieval (IIDR) areas. In this session vendors will present information in the following IIDR technology areas:

- Object-relational database management
- Text search and retrieval engines with unique indexing capabilities
- Advanced hardware and parallel architectures for data indexing and retrieval

Several vendors will focus on specific IIDR technology offerings. Other vendors will initially describe product and service offerings in one or more IIDR technology areas, and then review other complementary offerings.

Automated Language Translators

With the increasing use of foreign open source information, a concomitant and increasing need exists for foreign language translation services. In this session two vendors will review their product offerings in automated English-to-Japanese and English-to-Russian translation tools, and then review other complementary offerings.

IIDR - Natural Language Capabilities

In this session the vendors will describe their full text information indexing, discovery and retrieval systems that incorporate natural language capabilities. Vendors will review a suite of innovative products and services across a range of natural language technology areas such as English and non-English retrievals, extraction and summarization techniques, and concept-based retrievals identified through linguistic analysis. Additionally, one vendor will describe complementary speech recognition technology.

IIDR - Advanced Technologies

Several advanced technologies are being applied against the IIDR problem set. These advanced technologies include: visualization tools, neural networks, and artificial intelligence. In this session each vendor will discuss its application of one of these advanced technologies in an IIDR product. Additionally, one or more vendors may also review other complementary offerings.

IIDR - Distributed Heterogeneous and Large Database Support

To operate across a distributed heterogeneous architecture or to support very large databases, IIDR systems must satisfy additional, complex functional requirements. Such requirements may include support for distributed queries, distributed update protocols, enterprise-wide metadata, hierarchical disk and tape storage systems, and very large RAM caches. Two vendors in this session will outline their distributed heterogeneous search and retrieval systems. Two other vendors will discuss product and prototype capabilities in the areas of very large digital libraries, data compression, data warehousing, data mining, and parallel databases. Additionally, one or more vendors may also review other complementary offerings.

Communications: Speed, Bandwidth and Wireless

The ever-increasing internetting of information servers across the globe, and the demand for faster communications services down to the desktop, require greater communications capacity and connectivity. In this session, one vendor will identify its research results associated with a new information retrieval protocol on high-speed wide area networks. The other vendors will discuss their product support for Asynchronous Transfer Mode (ATM) communications, bandwidth on demand, and wireless communications.

**Thursday Morning
SESSION 1**

Plaza A, Room #1

**SECURE PRODUCTS,
CAPABILITIES, PROTOCOLS,
AND ENCRYPTION**

**ORIGINAL PAGE IS
OF POOR QUALITY**

PRESENTATION ABSTRACT

"A Commercial Approach to Solaris 2.4 B1/CMW Security"

**Randall J. Sandone, President and CEO
Argus Systems Group, Inc.
1776 E. Washington St.
Urbana, IL 61801**

Overview: Argus Systems Group, Inc. is an international supplier of advanced information security products including trusted operating systems meeting government and commercial security requirements. The Argus management team has been involved in the design, development, testing, and support of trusted systems since 1988.

In the past, vendors of trusted systems built products that were tailored to government requirements. The government security evaluation process tended to force these vendors to build "government-centric" products in order to achieve successful product accreditation. These "government-centric" products lacked commercial market appeal and did not sell well commercially. As a consequence, trusted systems vendors had to rely on the government market alone to recover heavy investments in developing, testing, and evaluating trusted systems. Government customers ultimately paid the price through higher prices, limited functionality, and tepid product support.

Argus is breaking the mold - building "commercial" trusted systems which can also be adapted to government needs. Argus's mission is to employ its extensive experience in the technology and many years of field support to develop and support commercially viable trusted systems that satisfy the needs of a broad range of customers - including government customers. Argus has developed a unique approach to enhanced security that is flexible, modular, scalable, and affordable. The Argus products, based on SunSoft's Solaris 2.4 operating system support the world's leading computer platforms from the world's leading vendors.

Presentation Theme: The presentation to conference attendees will explain how Argus has responded to the government's needs for enhanced information security by developing a commercially-viable product line which also meets the security requirements of government customers. The presentation will cover:

- A overview of Argus Systems Group, Inc.

- Discussion of the historical market trends leading to a stagnant market for trusted systems in the government in 1994.

- A discussion of Argus's market and product vision for 1995 and beyond.

- The goals, objectives, and technical challenges of building the "next generation" of trusted system products using a commercial product approach.

- A discussion of the operational, technical, and economic benefits to government customers of applying a commercial approach to government security requirements.

- A discussion of the status of the Argus Solaris 2.4 product development.

- A review of the status of the Argus Solaris 2.4 product evaluation.

- An overview of the changing commercial attitudes towards trusted operating systems and government security evaluations.

AT&T GOVERNMENT MARKETS

Point of Contact: Larry Nardolillo

Address: 8403 Colesville Road, Silver Spring, MD 20910

Phone: (301) 608-4476 **Fax:** (301) 608-4096

Technology, Product, or Service Keywords: Low bit rate video service (112 Kbps to T1.5 Mbps), common user DoD network, public switched networks, multipoint and secure multipoint calling

Description: AT&T Government Markets will be explaining our current video service offerings available to various federal agencies. We will be focusing specifically on the availability of an integrated video network providing secure multipoint calling to DoD agencies.

Status: Secure Multipoint Video Conferencing - DISA Product
Multipoint Video Conferencing - DISA Product/Commercial Product
"Off-Net" Calling Options - DISA Product/Commercial Product
Standards Based Conferencing - DISA Product/Commercial Product
International Video - DISA Product/Commercial Product

**Thursday Morning
SESSION 2**

Plaza A, Room #2

INFORMATION

PROVIDERS

DIALOG, Knight Ridder Information, Inc.

Point of Contact: David C. Brown

Address: 1525 Wilson Boulevard
Suite 650
Arlington, VA 22209

E-Mail david_brown@corp.dialog.com
Phone (703)908-2382
Fax (703)524-1680

Technology, Product or Service Keywords: Full text and bibliographic information retrieval; Internet access; windows, menus, or client server interfaces; and full service document delivery

Description:

Knight-Ridder Information, Inc. is a leader in providing full-service access to open source information available throughout the world. Through two on-line services, DIALOG and DATASTAR, the company provides access to more than 550 diverse databases representing over 100,000 national and international sources. Although most information is stored in English, some sources are also available in their original language. Precision search tools include relevance ranking, statistical analysis, and standard Boolean logic to enhance the information collection process in both command and menu modes. Information is available on virtually every area of inquiry including; multi-national trades statistics, global financial data, journal articles, newspapers, industry analysis, market research, conference papers, conference proceedings, standards, technical literature, patents, and much more. To complete the information retrieval cycle, Knight-Ridder Information provides its customers with the capability of archiving and redistributing data within an organization while remaining copyright compliant. In addition, our SourceOne division can provide complete document fulfillment services for titles retrieved for which the full text is not available on-line. Never before have these tools all been available from one organization.

Status:

Commercial Products

- | | |
|-----------------|---|
| DIALOG | DIALOG provides information from over 450 databases with over 3,400 full text publications available. There is over 3.5 terabytes of information stored, with a wide variety of international sources and native languages. |
| DATASTAR | DATASTAR provides information from over 300 databases in a wide variety of native languages. DATASTAR provides worldwide coverage of information, specializing in European information. TRADSTAT is the |

world's largest trade statistics service providing monthly reports of imports and exports at product level for over 85% of world trade.

E.R.A.	Electronic Redistribution and Archiving, allowing full copyright compliance
TARGET	Relevance ranking retrieval system (non-Boolean)
Custom Dialog	User customized menu product
SourceOne	Total document delivery service

Commercial Prototypes

ProBase -

ScienceBase -

BusinessBase -



LEXIS-NEXIS

 A member of the Reed Elsevier plc group

*Providers of open source information solutions
to the international intelligence community.*

LEXIS®-NEXIS® services

LEXIS-NEXIS offers a vast array of open source information, retrieval, storage and management products and services designed to meet the unique requirements of the intelligence community. As the pioneer in the online information industry since 1973, LEXIS-NEXIS is the world's most comprehensive full-text legal, news and business information service, providing precise, timely, relevant information and services. A total of 417.5 million documents online in 5,620 databases and 1.82 million documents added *per week*, LEXIS-NEXIS is the premier provider of enhanced information services.

Access to over 2,400 full-text current and archived news sources is provided by NEXIS®, the leading news and business information online service. Updated several times a day, NEXIS provides quick access to local, regional, national and international news sources. NEXIS carries hundreds of major news publications and is a one-stop service for broadcast transcripts, such as CNN, NPR and ABC. Constantly expanding its online information databanks, LEXIS-NEXIS delivers same-day news from major international newspapers and news services. Key news wires from around the world include Reuters, Agence France-Press, TASS and Xinhua, along with major international news sources.

Patent and trademark materials are also included in the LEXIS-NEXIS online coverage, as well as extensive business and financial information, medical data from major journals and public records detailing assets and background on businesses.

The international library on the LEXIS® service contains treaties and agreements, U.S. federal and state cases arising under international law, and topical and professional journals. LEXIS also offers online access to major archives of federal and state case law, and continuously updated statutes and regulations.

As an online source for important international information, LEXIS-NEXIS offers convenient access to the highly respected Jane's Defence publications, as well as being the only online service for *Jane's Sentinel*. In addition, the LEXIS® Country Information Service™ contains country analysis reports by country, region and topic. Truly a global information resource delivered right to the desktop of the intelligence professional.

But LEXIS-NEXIS' commitment to providing outstanding information services goes beyond its online services. LEXIS-NEXIS also offers productivity tools to effectively put information to work for the intelligence community, in any form, any place, any time.

FREESTYLE™

The FREESTYLE feature enables users to search the LEXIS-NEXIS services with plain English search descriptions. This innovation uses a search methodology, called *associative retrieval*, which allows users to enter LEXIS-NEXIS search requests in plain English.

FREESTYLE gives LEXIS-NEXIS users a choice, either as an easy-to-use tool for online research or to compliment the more traditional boolean method of online searching.

MORE

The new MORE feature enhances the power of a FREESTYLE search and provides even greater search flexibility. When the user selects a relevant document on LEXIS-NEXIS, the MORE feature will analyze the contents of that document, extract the most important words and construct a subsequent FREESTYLE search recognizing those common phrases, words and citations. At that point, the FREESTYLE feature will automatically retrieve additional documents that closely resemble the model document.

ECLIPSE™

The ECLIPSE feature (Electronic Clipping Service) monitors the LEXIS-NEXIS services for individually requested topics, and reports new corresponding materials and developments. ECLIPSE automatically searches new information added to LEXIS-NEXIS on a daily, weekly or monthly basis and enables the open source intelligence professional to continuously monitor emerging issues.

TRACKER

LEXIS-NEXIS Tracker in conjunction with Lotus Notes® provides a comprehensive electronic daily source of information on pre-selected topics. Each Tracker is compiled daily from more than 2,400 sources in the LEXIS-NEXIS services. Delivered to a Lotus Notes folder every morning, the Tracker feature displays an updated listing of articles corresponding to the pre-selected topic. The articles, gleaned earlier that same day from the LEXIS-NEXIS services, comprise local, regional, national and international information sources.

For even greater flexibility, Folio Fusion offers a suite of tools for integrating Folio infobases with Lotus Notes databases. With Folio Fusion, users of Lotus Notes can easily store and retrieve vast amounts of information from Folio infobases.

FOLIO

The Folio Corporation is widely recognized for its innovative information management solutions. A LEXIS-NEXIS subsidiary, Folio is a pioneer in the development of *infobase* software products. An infobase is analogous to a database, but much more effective at managing the semi-structured forms of information that intelligence professionals have to work with often.

Folio VIEWS™ software enables researchers to collect, organize and share information more effectively through infobases. Supporting files up to 16 terabytes, Folio VIEWS makes it easy for professionals to adapt and personalize information to fit their needs. The simultaneous sharing of information across different software platforms, along with extensive graphics capability, powerful searching features and easy navigation are key features of this award winning technology.

For additional information and open source solutions, contact LEXIS-NEXIS Government Information Services, 1-800-985-8765, fax 1-800-494-6718 or fax (513) 865-1350.

**Thursday Morning
SESSION 3**

Plaza A, Room #3

**ELECTRONIC
DOCUMENT MANAGEMENT
AND PUBLISHING**

Oracle Corporation

Point of Contact: Louise A. Zullo

Address: 196 Van Buren Street, Herndon, VA 22070

Phone: (703) 708-6774

Fax: (703) 708-7922

Technology, Product, or Service Keywords: free text search and retrieval, searching and browsing of multimedia data, document management, client/server, language understanding technology, data summarization.

Description: Oracle Corporation is the world's leading supplier of information management software. Oracle products manage the storage and retrieval of structured, spatial (GIS), textual, image, video, and audio data for customers in more than 90 countries around the world. The Oracle7 DBMS runs on all major hardware and operating system platforms available worldwide to include: personal digital assistants (PDAs), PCs, workstations, minicomputers, mainframes, and massively parallel computers. Oracle's data management software provides all of the features expected from a modern-day DBMS: performance, availability, integrity, security, and ease of use. The Oracle7 DBMS was designed from the bottom up to take full advantage of today's parallel computing architectures, and additionally each port of the DBMS takes advantage of the unique platform on which it is run. It conforms to Open Standards conventions and ANSI/ISO/FIPS standards in its support of interoperability. Oracle7's scalability is unrivaled. Oracle has customers deploying databases of many hundreds of GigaBytes into TeraBytes of data. Oracle also provides extensive 8- and 16-bit national language support (NLS) for virtually all European and Asian languages.

Oracle supports a fully distributed database concept within the Client/Server architecture. Users do not need to know where data is located. They just have to ask for it and Oracle locates the data and returns the portions requested. The entire logical database appears to the users to reside on their desktop, but from a physical standpoint, data can be located closest to where it is used most frequently. Oracle Mobile Agents allows users to disconnect their laptops from the corporate network while still maintaining access to the corporate databases through cellular data transfer. Performance is maintained through a Client/Agent/Server architecture. Oracle databases can be used as back-ends to the World Wide Web (WWW). Surfers request data through the WWW interface, but the real search is taking place within an Oracle database. Results are automatically marked-up and presented back to the requester through the WWW interface. The WWW interface kit is available from Oracle free of charge. To organize all of an organization's disparate databases into single logical database accessed through a consistent interface, Oracle provides a comprehensive selection of gateway products that provide access to data stores of all types.

Security is a concern with all applications, but for some it is a priority. Oracle7 provides many mechanisms such as privileges, roles, views, stored procedures, auditing, passwords, encryption, and MLS enforcement which individually or in combination can be used to enforce any security

requirements. Generic Oracle7 is certified as C2-compliant by NCSC and Trusted Oracle7 is certified as B1-compliant. Trusted Oracle7 retains all of the functionality of the base product, but then adds multi-level security enforcement. Oracle Secure Net Services can be used to encrypt data traversing a network and also to identify when data tampering has taken place during transmission.

Oracle TextServer3 with ConText integrates the linguistic analysis of Oracle ConText with the power of the Oracle7 Parallel Database to provide the most advanced text retrieval system available today. Using Oracle TextServer3, developers can integrate large-scale document and multimedia databases with their strategic client/server applications, and give analysts access to powerful text storage, intelligent analysis, and retrieval features. The Oracle ConText technology gives Oracle TextServer3 automatic data summarization features, along with ability to filter massive amounts of information down to the relevant documents.

With the integration of TextServer3 with Odesta LiveLink, analysts now have a full document management, workflow management, and collaborative workgroup facility in a full-text electronic environment. The Odesta LiveLink has true client/server compatibility, based on the Oracle7 database, with support for object technology. Odesta LiveLink is extensible through dynamic snap-ins to SQL*Net, MAPI, ODBC, and more.

Oracle Corporation provides the most complete line of information management software. To ensure that customers get the most out of the software, Oracle provides support, education, and consulting. Support is available over the phone, on the internet, and in-house to satisfy many different requirements. Oracle Education teaches courses all over the world in our training centers and on-site at customer facilities. Interactive television training is also available through Oracle Education. Oracle offers consulting services for any or all phases of a development effort. Oracle consultants are highly trained in satisfying customer requirements and getting the most out of Oracle's products.

In the Oracle presentation, we will be describing the Odesta LiveLink document management, workflow, and collaborative workgroup product.

In the Oracle exhibit, we will be demonstrating Oracle LiveLink along with TextServer3 with ConText product. TextServer3 with ConText is a full text retrieval search engine with the ConText linguistic analysis tool. ConText allows for analysts to do data summarization and English language understanding. We will also be speaking about Oracle's WWW products, Oracle MultiDimension for spatial data, and Oracle Mobile Agents for mobile computing.

Status:	Odesta LiveLink	Commercial Product
	TextServer3 with ConText	Commercial Product
	Oracle MultiDimension	Commercial Product
	Oracle Mobile Agents	Commercial Product

Documentum, Inc.

Point of Contact: Jeffrey A. Miller

Address: 4683 Chabot Drive, Pleasanton, CA 94588-2748

Phone: (510) 463-6800

Fax: (510) 463-6850

Technology, Product, or Service Keywords: Documentum Enterprise Document Management System (EDMS), object oriented, Virtual Documents, Virtual Document Manager, Docobjects

Description: Documentum, Inc. is a leading developer and marketer of software for enterprise document management. Documentum's Enterprise Document Management System (EDMS) is a family of open, client/server software products that enable Fortune 1000 companies to create, capture, and reuse their intellectual capital effectively across the enterprise.

The Documentum EDMS accelerates processes for gathering, creating, and dynamically assembling knowledge into a document, distributing documents to all appropriate users, and managing workflow throughout the organization. An object-oriented system, the Documentum EDMS stores documents and document components as reusable Docobjects™. A Virtual Document is a unique combination of Docobjects that can be retrieved from any source and assembled on demand according to a company's own business rules.

The Documentum EDMS is currently in use at more than 100 customer sites. Target customers are companies in highly-competitive industries which need to streamline internal business processes. Pharmaceutical customers, for instance, use the Documentum EDMS to pull together the complex new drug submission that must be approved by a government agency before a drug can be marketed.

At CENDI/COSPO, Documentum representatives will be on hand to demonstrate the Documentum product and to answer questions about the document management market.

Status: Documentum Server™ - Commercial Product
Documentum Workspace™ - Commercial Product
Documentum Toolkit™ - Commercial Product

**Thursday Morning
SESSION 4**

Terrace Room #1

**INFORMATION INDEXING,
DISCOVERY
AND RETRIEVAL**

Cambridge Parallel Processing

Point of Contact: Kevin E. Linck

Address: 19900 Hamil Circle, Suite 100, Montgomery Village, MD 20879-5651

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Fax: 301-948-5257

Technology, Product, or Service Keywords: free text retrieval, massively parallel, indexing engine, superperformance computing, DAP, GAMMA, MPP, DAPText, enterprise-wide client-server, index server, phrases, truncated words, keyword, multimedia

Description: Cambridge Parallel Processing (CPP) has developed the first massively parallel, free-text retrieval network server indexing engine using a Fourth-Generation DAP superperformance computer. DAPText combines a powerful text indexing engine and new innovative search algorithms delivering exceptional free-text retrieval performance beyond that which can be achieved by any other means. DAPText conforms to today's enterprise-wide client-server, information processing strategies and can be a key factor in downsizing data processing operations costs. DAPText is an autonomous Index Server, designed to work alongside your existing Data Store. By smoothly taking over the massive indexing and matching tasks, DAPText frees your system to concentrate on data storage, distribution and user interaction. DAPText facilitates access to the ever-growing stores of text and other unstructured data objects in a way no other system can. Daptext extends the standard "inverted indexing" approach to document retrieval by facilitating complex search requirements including phrases, truncated words, keyword and specialized dictionaries. The Daptext Index Server Supports: Large Numbers of Concurrent Users, High Query Rates, Huge Database Sizes, High Volatility Databases, Multimedia Objects, Flexible Classification.

Status:

DAP 610C 4096 Processor Element Computer	- Commercial Product
DAPText - free text retrieval software	- Commercial Product
DAP GAMMA I & II Computers	- Commercial Product

Phone: (703) 790-2110

Excalibur TRS Server

Excalibur TRS (tm) Text Retrieval Server is a software developer's toolkit designed to provide full-text indexing and searching as an affordable and basic service in distributed, client/server applications. Excalibur TRS provides a robust and efficient programming environment that is simple to use, requires small index overhead, and delivers advanced, pattern recognition-based text retrieval services in any application that creates, stores, manages or processes text.

Excalibur EFS Electronic Filing Software

Excalibur EFS (tm) Electronic Filing Software is a member of the Excalibur Retrieval Software family and uses Adaptive Pattern Recognition Processing to provide you with the most accurate and flexible document imaging available.

Excalibur EFS allows you to collect, automatically index, store and retrieve text files and images from multiple electronic sources including computer disks, scanners, modems and facsimile machines.

EFS features a graphical user interface that replicates a physical file room with cabinets, drawers, folders, in-baskets and wastebaskets. This intuitive environment makes EFS simple to learn and easy to operate, while providing flexible options for organizing, storing, and retrieving information.

EFS provides you with a wide variety of methods for retrieving documents from your files using:

- powerful, content-based "fuzzy searching"
- keyword and Boolean searching
- database queries for document control information
- direct retrieval using file room icons
- optional user-defined synonym searching

Excalibur's "fuzzy searching" is an intuitive, free form retrieval method that allows you to retrieve information with precision, flexibility and speed. Using fuzzy searching, you can find documents even if you don't know their name or file location by automatically searching an index of their contents. Fuzzy searching ignores optical character recognition (OCR) errors commonly found in scanned documents, as well as data entry keying errors and misspelled search queries.

Excalibur XRS Image Server

Until now, finding the right image from a large image database has been costly and difficult. With traditional methods, each image needs to be carefully studied and indexed manually, based on data such as subject, title or some other identifying reference. The drawbacks are numerous: the high cost of manual entry; the inherent bias of the operator at time of entry; and changing indexing terms and keywords over time.

Traditional alphanumeric retrieval methodologies, which work well for highly structured information, have been stretched to meet the new challenge of retrieving digitized multimedia information. The limitations of the traditional approach prevent users from effectively managing their image databases of stock photographs, maps, medical images, trademarks or any number of graphic materials that are critical to a business or specific application.

Point of Contact:
Robert L. Caudill

Excalibur has pioneered a new paradigm for the retrieval of images. Based on Adaptive Pattern Recognition Processing (APRP (tm)), the Excalibur XRS Image Server employs a neural network method that identifies binary patterns which have been extracted from the digital information. To match and retrieve images with Excalibur XRS, "clue" images are entered into the system and processed using the same pattern analysis used to index the image database. The binary patterns of the image clue are then compared to the image database index and a hit list of matching images is returned.

Excalibur XRS Fingerprint Server

The Excalibur Fingerprint Retrieval Server (tm) is a member of the Excalibur Retrieval Software family of core technology products. This Software Developer's Kit provides a robust and efficient programming environment that is simple to use, requires small index overhead, and delivers advanced, pattern recognition-based technology which enables the development of powerful applications for automated processing, indexing and matching of digital fingerprint images.

**Thursday Morning
SESSION 5**

Terrace Room #2

**AUTOMATED
LANGUAGE
TRANSLATORS**

Access Russia

A division of Access Innovations, Inc.

Point of contact: Marjorie M. K. Hlava

Address: PO Box 40130, Albuquerque, New Mexico 87196

4314 Mesa Grande SE, Albuquerque, New Mexico 87108

Phone: (505) 265-3591 **Fax:** (505) 256-1080

Technology, Product, or Service Keywords: Russian Information, Science, Scientific and technical information, Legal and regulatory information, Translation, Russian to English, RETRANS, English to Russian, ERTRANS. Browser, multilingual search interface. Cyrillic spell checker. ORCON, Patents. Maps. Databases. Eastern European, Soviet. Former Soviet Union, document delivery, North Korea, Ukraine, Romania, Bulgaria, Iran, Iraq, Georgia, libraries.

Description: Access Russia is a full service information company with 1) 2 CDROM databases the first on Science and Technology in Russia and the second on the laws and Regulations of Russia. These are searchable in both Russian Cyrillic and the English Latin character sets. 2) Document delivery services for Russian and the entire former Soviet block. 3) Database acquisition including from VINITI, VNTEC, Atominform Patents and over 3000 other sources. 4) translation system Russian to English and English to Russian running on a PC with links to OCR, takes any ASCII file and runs full text in seconds. 5) Multilingual search interface to search Russian Cyrillic databases using English queries and viewing the results in English. 6) ORCON Cyrillic language spell checker 7). special studies and other requests on demand.

Status: Science and technology CD ROM	Commercial product
Legal and Regulatory CD ROM	Commercial product
Document Delivery	Commercial Service
Database Acquisition	Special order
Translation Systems	Commercial Product
English to Russian	
Russian to English	
Browser - Multilingual search interface	Commercial Product
Special studies and Reports	Special Order
ORCON Cyrillic spell checker	Commercial Product

Language Engineering Corporation

Point of Contact: John Richards

Address: 385 Concord Avenue, Belmont, MA 02178

Phone: (617) 489-4000 **Fax:** (617) 489-3850

Technology, Product, or Service Keywords: machine translation, machine-aided translation, tools using syntax, linguistics and grammars, Japanese, Chinese, lexicons, natural language

Description: Language Engineering Corporation (LEC) is the developer of the LogoVista English to Japanese translation systems, LogoVista E to J and LogoVista E to J Personal. The LogoVista translation systems are available for Windows, Windows NT, Macintosh, Power Macintosh, and UNIX. Version 2.0 of LogoVista E to J was one of the first native applications available when the Power Macintosh was introduced in March 1994. In May 1994, LogoVista E to J 2.0 received the Apple Japan Product Excellence Award. Version 2.5 of LogoVista E to J will be available in July 1995.

LogoVista E to J features a comprehensive, general purpose dictionary with more than 110,000 entries. These entries are annotated with detailed syntactic and semantic information that guides the system's parser. Users can also create their own dictionaries to supplement the LogoVista dictionary. The user dictionary import/export features allow users to import data in a text file into a user dictionary and export the contents of a user dictionary into a text file. Optional technical dictionaries covering 21 fields (including business, science and technology, computers, and medicine) may be purchased separately. The technical dictionaries contain a total of more than 540,000 entries.

LogoVista E to J can translate text both automatically and interactively. Before translation, the user can set options including the desired level of formality and the balance between translation speed and accuracy. Users can also set the preference given to user dictionary entries and rank the LogoVista dictionary, user dictionaries, and technical dictionaries in order of priority. When using the system's interactive features, the user can set the part of speech of an English word or phrase, and choose alternate Japanese translations for words, phrases, and entire sentences. LogoVista E to J's learning feature keeps a record of how often alternate translations are chosen for each dictionary entry and tailors its output accordingly. In this way, the system adapts itself over time to each user's preferences.

Among the new features found in version 2.5 of LogoVista E to J are: translation memory archives for storing and reusing previously translated sentences, enhanced user control over system learning, and the ability to create user dictionary entries with a wider variety of English parts of speech. Version 2.5 also features an expanded dictionary and grammar.

LogoVista E to J Personal, the second member of the LogoVista family of translation systems, is designed for translating short, time-sensitive documents such as faxes, letters, and electronic mail. LogoVista E to J Personal features the 110,000-entry LogoVista dictionary, support for user dictionaries, and interactive features that enable the user to set the part of speech of an English word or phrase and choose alternate Japanese translations for words.

LogoVista E to J version 2.5 is priced at \$995. Technical dictionaries for use with LogoVista E to J are priced from \$125 to \$695 each. LogoVista E to J Personal version 1.5 is priced at \$395.

The following technical dictionaries are currently available:

General Business, General Science and Technology, Aerospace Engineering, Agriculture, Applied Chemistry, Applied Physics, Architecture, Biology, Biotechnology, Chemistry, Civil Engineering, Computers, Earth Science, Electrical Engineering and Electronic Communications, Materials Science, Mechanical Engineering, Medical Science, Naval Architecture, Physics, Urban Engineering, Zoology

Language Engineering Corporation is currently developing LogoVista J to E for the translation of Japanese into English and LogoVista E to C for the translation of English into Chinese.

Language Engineering Corporation is able to pursue an ambitious development schedule for other machine translation products because of the modular design of its software. The separation of data and program means that the existing translation engine, grammar, English dictionary, and user interface can remain constant while synthesis and dictionary translations are developed.

In our presentation, Language Engineering Corporation will give an overview of the LogoVista translation systems and demonstrate LogoVista E to J. In our exhibit, LEC will demonstrate LogoVista E to J and LogoVista E to J Personal.

Status:	LogoVista E to J	Commercial Product
	LogoVista E to J Personal	Commercial Product
	LogoVista J to E	Commercial Research
	LogoVista E to C	Commercial Research

**Thursday Afternoon
SESSION 1**

Plaza A, Room #1

**SECURE PRODUCTS,
CAPABILITIES, PROTOCOLS,
AND ENCRYPTION**

(CONTINUED)

GC GEMINI COMPUTERS
INCORPORATED
BOX 222417 • CARMEL, CALIFORNIA 93922 • (408) 373-8500

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Technology, Product, Service Keywords

Trusted Security Firewall, Trusted Security Guard
High Assurance A1 Certified Gemini Trusted Network Processor (GTNP) with Integrated Encryption
Secure Heterogeneous Distributed Computing Systems, Trusted End-to-End Encryption
Trusted Third Party Services, Secure Electronic Commerce & Government Support

Description

Gemini Computers, Inc. is dedicated to the development, manufacturing, servicing of commercial trusted computer and network products and their applications to secure heterogeneous distributed computing systems. The COTS Gemini Trusted Network Processor (GTNP) with integrated encryption is certified at the A1 level. The Gemini products have been used in four operational secure systems since 1989-1990, three in the United States and one in the United Kingdom.

Three aspects of the Gemini Trusted Security Firewall & Guard products are presented in the framework of their support of secure heterogeneous distributed systems. (1) Protection in Breadth: incremental building of several end-to-end encryption supports at various ISO network layers in secure internetworks, (2) Protection in Depth: incremental building of secure electronic commerce & electronic government applications at various layers of secure operating systems with trusted encryption, (3) Trustworthiness & Certification: A1 certification in compliance with TCSEC, TNI and TDI of the Rainbow Series and planned certification in compliance with the high assurance Commercial Security Level 3 of the emerging International Common Criteria.

In the exhibit, the Gemini Trusted Security Firewall & Guard product will be demonstrated in a secure heterogeneous distributed system consisting of wide-area-networks, metropolitan area networks and local area networks.

Status

Gemini Trusted Network Processor with Integrated Encryption	COTS Product (A1 Certified)
Gemini Trusted Guard Base (GTGB)	COTS Product
Gemini Trusted Server Base (GTSB)	Commercial Prototype
Secure Heterogeneous Distributed System Design Integration	Supporting System

TRUSTED SECURITY FIREWALLS & SECURE HETEROGENEOUS DISTRIBUTED COMPUTING SYSTEMS

Tien F. Tao, Gemini Computers, Inc.

The Gemini Trusted Security Firewall & Guard products will be presented in the framework of an open secure heterogeneous distributed computing system infrastructure that can support incremental building of information system security using multi-vendor products and technologies. The increased capabilities over the first generation of security firewall/gateway products will be presented in three aspects: 1. Protection in Breadth, 2. Protection in Depth, 3. Trustworthiness and Certification. (Fig. 1)

The Gemini Trusted Firewall & Guard are built on the underlying foundation of commercial-of-the-shelf (COTS) Gemini Trusted Network Processor (GTNP) with integrated encryption which has been certified at the Class A1 level by the National Computer Security Center. The cost-effectiveness and trustworthiness of the secure system applications will be presented based on the experience of using the Gemini products in four secure systems which became operational since 1989-1990.

The Gemini Firewall and Guard products can be used to meet the need for more and stronger information protection as the new electronic government and electronic commerce are offering more efficient and user-friendly functionalities over internetworks. The Gemini Firewall and Guard products enable the establishment of secure private enterprise connections over unprotected public telecommunication backbones.

1. Protection in Breadth

The Gemini Trusted Firewalls can be used to separate different organizations and user communities which may be mutually trusting, mutually cautious, mutually suspicious or mutually hostile. Various trusted end-to-end encryption systems can be supported at different ISO network layers, e.g., firewall-to-firewall, host-to-host, workstation-to-workstation, PC-to-PC, user-to-user, writer-to-reader, enterprise-to-enterprise, trading partner-to-trading partner, etc. The end systems consist of mostly commercial products which do not support security labels and are not trusted nor multilevel secure. The trusted encryption capabilities of the GTNP can be used to build multilevel secure (MLS) and/or multiple single level (MSL) systems.

2. Protection in Depth

The layered architecture of the GTNP with integrated encryption can be used to incrementally build different secure applications on the same underlying trusted foundation, e.g., secure e-mail, secure EDI, secure multi-media, etc. Most of the applications are commercial products which do not support security labels and are not trusted nor multilevel secure.

3. Trustworthiness and Certification

The trustworthiness of the secure heterogeneous distributed systems and secure applications can be built on the A1 certification of the underlying trusted foundation of the GTNP with integrated encryption in compliance with the Rainbow Series (TCSEC, TNI, TDI) and new secure distributed system criteria being developed. Approaches to meeting the criteria of the new high assurance Commercial Security Level 3 of the emerging International Common Criteria for the trusted foundation and the emerging high assurance System Security Profile for trusted applications will be discussed.

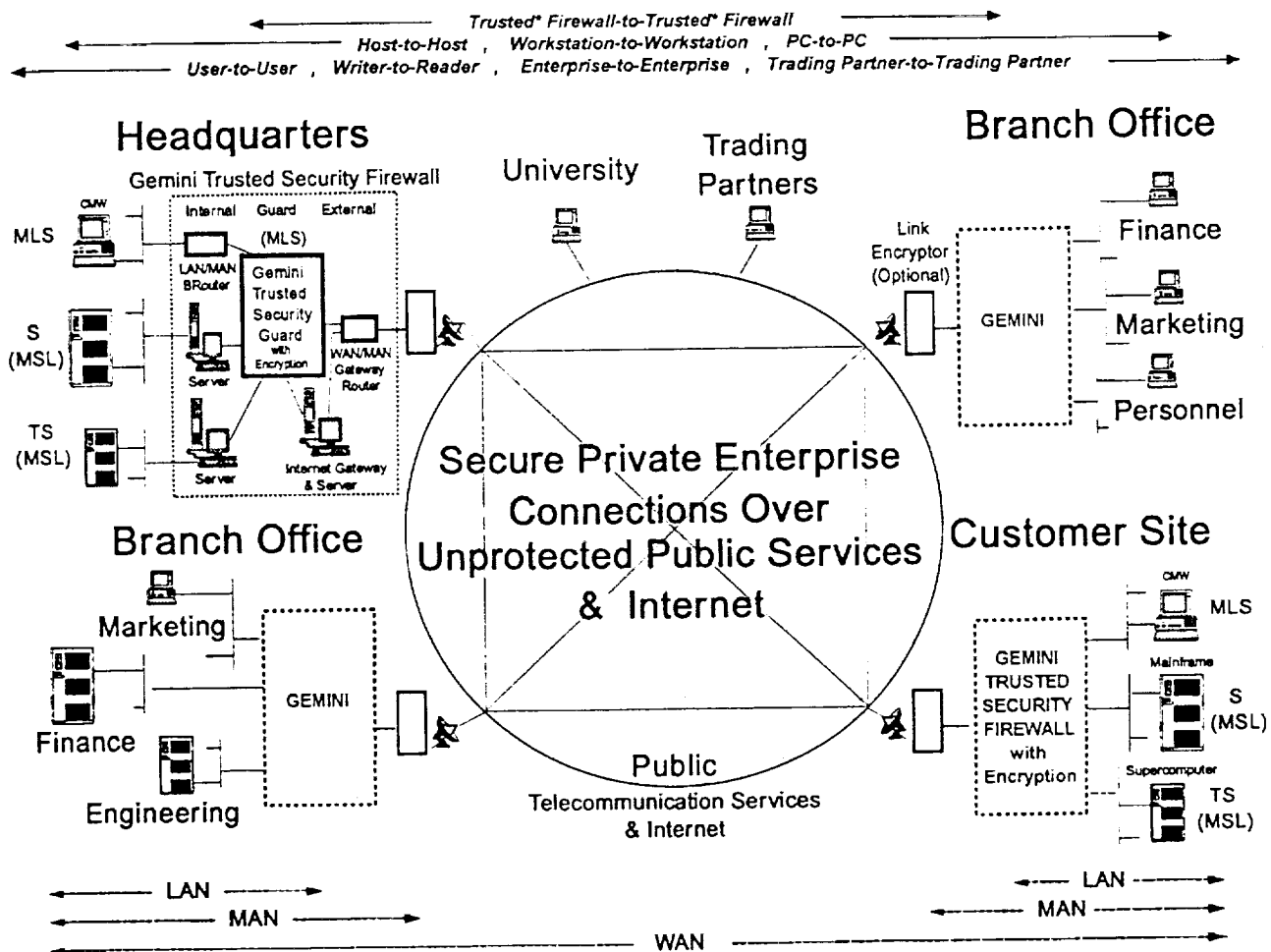
The cost-effectiveness, performance and trustworthiness of secure systems using Gemini Trusted Security Firewall & Guards will be demonstrated at the Gemini Exhibit.

NEXT GENERATION SECURITY FIREWALLS

GEMINI TRUSTED* SECURITY FIREWALL

1. PROTECTION IN BREADTH - Incremental Building in Systems

Supporting Trusted End-to-End Encryption Systems*



2. PROTECTION IN DEPTH - Incremental Building in Software

Upgradable When Needed on the Same Basic Gemini Trusted Platform*

3. TRUSTWORTHINESS* & CERTIFICATION*

* Can be evaluated & certified by independent authorities in accordance with appropriate criteria
Gemini Trusted Network Processor (GTNP) with Integrated Encryption - Certified by NCSC at the highest trust level of Class A1
Gemini Guards Built on GTNP - Used in 2 large operational systems since 1990 (1 in US & 1 in UK)

Trusted* Product Manufacturing -- INFOSEC Consulting -- Supporting INFOSEC System Integrators

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Fig. 1

Isolation Systems Limited

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Fax: (416) 231-8561

Technology, Product, or Service Keywords: WAN (Wide Area Network) Security, Internet Security, Encryption, Encryption Security, Network Security, Secure Protocols, Encryption on the internet, Secure Internetworking, Virtual Network Security, IP Security

Description: Isolation Systems offers network security integrated solutions based on an understanding of an organization's operation and specialized needs. Isolation Systems solves this problem by providing cost effective solutions through the use of custom produced hardware and software products. Isolation Systems Ltd. is currently providing an advanced wide area network security solution that provides packet encryption between routers, as well as to specified IP subnets on connected LANs. The ISPE looks intelligently at the WAN and the individual IP packets to insure specific packets are encrypted and tamper free. Isolation Systems products include the ISPE Managed, Routed, or standalone at different speed capabilities. Isolation Systems products include three management systems which include the Key Management, Table Management and Assurance Monitor Workstation.

In our presentation, Isolation Systems will provide corporate background information and describe the ISPE product, with special emphasis on the creation of virtual network security. In our exhibit, Isolation Systems will be available to discuss your organizations customized security requirement.

Status:	ISPE/M (Managed) Class A, B, C, D, E -	Commercial Product
	ISKM - Isolation System Key Management -	Commercial Product
	ISTM - Isolation System Table Management -	Commercial Product
	ISAM - Isolation System Assurance Monitor -	Commercial Product
	ISPE/R (Routed) Class A, B, C, D, E -	Commercial Prototype
	ISPE/SA (Standalone) Class A, B, C, D, E -	Commercial Prototype
	ISXE (X.25 encryptor) Class A	Commercial Product

Security - Isolation Systems Packet Encryptor (ISPE)

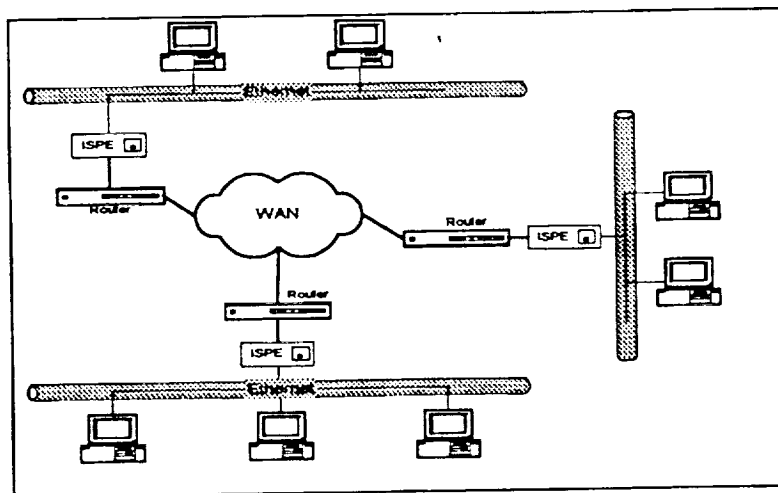
The network technology industry is growing at a phenomenal rate and there is an increasing need for communication security in government networks. Founded in 1979, Isolation Systems has over 12 years experience of providing solutions for a variety of military, government and commercial applications. Isolation Systems solves security problems by providing cost effective solutions through the use of custom produced hardware and software products. Isolation Systems specializes in the design, development and manufacture of high performance encryption devices on the Internet.

Isolation Systems Ltd. is currently providing an advanced wide area network security solution that provides packet encryption between routers, as well as to specified IP subnets on connected LANs.

The ISPE looks intelligently at the WAN and the individual IP packets to insure specific packets are encrypted and tamper free. The IP data is selectively encrypted or passed in clear text depending on any of the two conditions.

- IP address
- Source and destination subnet address

The ISPE is designed as a flexible and independent solution implemented through any hub, router or bridge that passes IP traffic. Actual connection of the ISPE is through the securely separated Red (cleartext data) and the Black (encrypted data) NIC card interfaces. See diagram below.



Within the IP packet received by the ISPE, the data is examined and encrypted using a key unique specific to the IP source and destination address.

The ISPE's Enterprise WAN solution is comprised of three subcomponents:

1. Packet Acquisition
2. Encryption Readdressing (encapsulation)
3. Transmission

Packet Acquisition

The packet acquisition system is an ISA bus ethernet card. Network packets are received by an ISPE from the red (cleartext) NIC and examined for the destination IP address. The ISPE internal address table then decides whether the data within the packet is to be encrypted or sent in clear text to the destination address.

Encryption Re-addressing (encapsulation)

On receipt of an outward bound packet to be encrypted, the ISPE encrypts the entire original IP packet. It then encapsulates the entire packet adding a new IP header of the destination ISPE.

Transmission

Once the ISPE has taken a packet through the Acquisition and Re-addressing phases, it then presents the packet to the router from the black (encrypted) NIC for transmission to the wide area network. The destination router receives the packet and passes it to the associated ISPE from the black (encrypted) NIC which decrypts the packet. The packet is returned to its original cleartext form and sent out of the ISPE from the red (cleartext) NIC.

Provided are the protocols the ISPE is able to secure: IP (Internet Protocol), ARP (Address Resolution Protocol), ICMP (Internet Control Message Protocol), IRDP (ICMP Router Discovery Protocol). The ISPE is capable of employing the following encryption algorithms: DES, Triple-pass DES, NATO 'G' & SEATO solutions, Proprietary and special algorithms for unique applications.

The ISPE may be managed from the Key Management System placed anywhere in the enterprise. The ISKM manages all electronic key distribution throughout the network. Initialization of keys, automatic redistribution of keys after crypto period expiry, resynchronization and monitoring of ISPE status are responsibilities of the Key Management System. For disaster recovery a hot backup unit may reside within the enterprise.

The ISPE Table Management System (ISTM) is a feature which is optional for larger networks with 15 or more nodes. The Table Management System allows for remote definitions of virtual channels (networks) between ISPE's so that the source and destination addresses are communicated and defined.

The ISPE Assurance Monitor (ISAM) is an optional feature which acts as a reporting workstation and a window into the operation. The functions of the Assurance Monitor are to initiate alarms, report diagnostics and trace the ISPE's throughout the enterprise. The ISAM monitors unauthorized access attempts and initiate a countdown alarm.

**Isolation Systems, 26 Six Point Road, Toronto Ontario M8Z 2W9, 416-231-1248,
1-800-387-8706, 416-231-8561 Fax**

Paralon Technologies Inc.

Point of Contact: Mr. Brent Anderson, Government Programs MGR

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Phone: (206) 641-8338

Fax: (206) 641-1347

Technology, Product, or Service Keywords: User Transparent, Automatic Access Control and Encryption Solutions, Operating System and Hardware Independent, Embeddable Technology

Description: Paralon Technologies Inc. was founded in 1992 to design, develop, and market a set of technologies and products aimed at solving problems related to the secure access and control of a diverse mix of computer systems and resources across heterogeneous networks.

In mid-1994, the company's proof-of-concept design for a device that provided hardware authentication, access control and automatic data encryption key management for users of dial-up services evolved into it's first commercial product called PathKey™. Paralon's current designs allow users to satisfy the demand for secure data communications, and other applications, where authentication of the devices used in *point-to-point* communications is required. Technologies being developed now will extend the same level of security, automation, and transparency to *multi-point* and *end-to-end* environments.

The tremendous interest generated by Paralon's current products and technologies is attributable in large part to the following unique characteristics:

- Automatic authentication of the communicating devices
- Automatic generation of random, zero knowledge, session-unique encryption keys
- Robust data communication error recovery with dynamic generation of new keys
- Completely transparent operation

Paralon is now porting it's Electronic Key Management (EKM) architecture to a new encryption platform. This new EKM platform provides a rapid prototype development sytem for proof of concept efforts. It will accept any encryption algorithm, carries a 32 bit processor, and is capable of limited digital voice encryption. Paralon will describe the Paralon EKM products. In addition, we will discuss how an organization can insert today's solutions into legacy systems and embedd the technology into future architectures.

Status: **PathKey/SA-** Commercial Product for Systems Administration
 PathKey/EX- Commercial Product for External Modems
 PathKey/IX- Commercial Product for Internal/PCMCIA Modems
 Pathkey/EKM- Rapid Prototype Development Platform

PC Guardian

Point of Contact: Charles Matthews

Address: 1133 E. Francisco Blvd., Suite D
San Rafael, CA 94901

Phone: 800-288-8126 **FAX:** 415-459-1162

Technology, Product or Service Keywords: Workstation security, access control, anti-virus, NetWare.

Description: Network Security Plus (NSP) from PC Guardian is a comprehensive workstation security product that can be installed, configured, and administered from a convenient central point, usually the administrator's workstation. With NSP, network administrators can implement workstation security on each network workstation remotely, greatly reducing the initial and on-going cost of protecting workstation data against unauthorized access. In addition, NSP integrates with Novell security and group capabilities to greatly simplify workstation security configuration and administration.

This presentation will be a brief overview of NSP implementation and a summary of NSP security features. Attendees are authorized to receive a special limited version of NSP.

Status: Network Security Plus - Commercial Product

Titan Corporation

Point of Contact: Dr. Robert E. Joseph

Address: 1900 Campus Commons Drive, Suite 400, Reston, VA 22091

Phone: (703) 758-5600

Fax: (703) 758-6559

Technology, Product, or Service Keywords: digital encryption, secure voice, secure data, secure fax, secure facsimile, secure communication

Description: Titan Corporation (TTN, NYSE) has developed the Secure Communications Interface Device (SCID) to provide users the ability to digitally encrypt sensitive voice, data, and facsimile communications without significant investment in new equipment. The SCID is a stand-alone device which makes use of existing telephones, fax machines, PCs, and telephone lines to provide end-to-end secure transmission.

The SCID combines the latest in speech processing and digital encryption techniques into one compact, easy-to-use unit to provide an extremely high level of security without compromising quality. Designed for the office environment and operational in minutes, the SCID can be connected to any voice-frequency telephone system using standard RJ11 telephone cables. Its universal power supply may be connected to 110 to 240 Volts AC, 50 to 60 Hz.

Historically, secure communications have been accomplished through expensive, dedicated secure devices that were difficult to use and costly to maintain and operate. Even today, many secure networks require encryption to be integrated with the voice, fax, and data peripheral equipment. However, with Titan's exclusive design, the user has secure communications without these limitations, at an affordable price.

In our presentation, Titan will provide corporate background information and describe the SCID product.

Status: Titan SCID - Commercial Product

Collins Computer Consulting, Inc.

Point of Contact: Kelly Collins

Address: 7272 Wisconsin Avenue, Suite 300, Bethesda, MD 20814

Phone: 301-924-0800

Fax: 301-924-0801

Technology, Product, or Service Keywords: Computer intrusion detection for Unix systems, audit analysis and audit reduction system, exception based reporting.

Description: Haystack Labs, Inc. based in Austin, Texas has developed an information warfare tool called STALKER. It tracks and reports user activities, computer misuses and systems resources. STALKER provides ongoing monitoring and management telling you who did what, when and how on your system. STALKER is commercially available on SUN OS, Solaris, CMW and IBM AIX.

Stalker will be presented during the Security track and we will be demonstrating the product in our booth.

Status: STALKER	Commercial Product
NET STALKER	Prototype Product

**Thursday Afternoon
SESSION 2**

Plaza A, Room #2

INFORMATION

PROVIDERS

(CONTINUED)

Dun & Bradstreet Information Services

DB a company of
The Dun & Bradstreet Corporation

5107 Leesburg Pike, Suite 2501, Falls Church, VA 22041
703-824-8383
800-424-2495

Dun & Bradstreet Information Services (DBIS) Strategic Government Services

Point of Contact: Marilyn M. Burton, Senior Account Executive

Address: 5107 Leesburg Pike Suite 2501 Falls Church, VA 22041

Phone: (703) 824-8383 (General); (703) 845-2734 (Direct); (703) 845-2727(Fax)

Technology, Product, or Service Keywords: WorldBase database, Dun & Bradstreet, count and retrieval software, global, UNIX, Boolean search, wild-card search, CD-ROM, on-line, Dataware Technologies.

Description: Dun & Bradstreet (D&B) made a major investment in the development of a global database access system called WorldBase. This investment in WorldBase allows DBIS to better serve our customers by providing unique capabilities, which makes our system quicker and easier to use, and improves our data quality and coverage. D&B WorldBase is a powerful tool that enables our customers to locate a business anywhere in the world, identify and link corporate family members and build customer-information systems.

In our presentation, D&B will provide a brief corporate overview, describe the evolution of WorldBase technically as well as the growth of the file since its inception. WorldBase is a powerful query database (D&B WorldBase On-line), as well as a source for custom data appenditures and file enhancements. Our presentation will focus on the process of converting vast amounts of data into usable information systems.

In Stage 2.2 of the database, there are in excess of 38 million D-U-N-S Numbered businesses worldwide, 3.6 that are corporately linked. The D&B WorldBase On-line files physically resides on a UNIX platform in our Berkeley Heights, New Jersey, USA information center. This configuration comprises dual Hewlett-Parkard processors and 96 gigabytes of disk storage. Records are loaded to one of these processors and then indexed using count and retrieval software supplied by Dataware Technologies, Inc., of Cambridge, Mass.

Status: WorldBase Database-Commercial Product
WorldBase CD's-Custom Production
WorldBase On-line Software-Beta Test
WorldBase Internet/Mosaic-Prototype

Point of Contact: Ellen Marsh
Address: Datapro Information Services Group
600 Delran Parkway
Delran, NJ 08075

Phone: (609) 764-0100 Ext 2889 **Fax:** (609) 764-8953

Technology, Product, or Service Keywords:

Description:

Datapro provides in-depth research, insightful analysis, and essential decision support to government and industry alike. The complete line of services offer access to technical information covering the entire scope of computer, communications, and security-related products, both domestic and international. Datapro's computer coverage includes hardware and software in the mainframe, mid-range, and PC areas. Complete communications information is available on voice, data, broadband, LAN and WAN. Comprehensive analysis of security-related products and issues affecting organizations are addressed.

Unclassified information security documents and directives issued by U.S. agencies are electronically presented within Datapro's newest service *Datapro GTAC³ Series*. Documents from the "Rainbow Series" and FIPS PUBS are examples of the types of documents currently available.

Also new to Datapro's portfolio of products is its *Convergence Strategies & Technologies* service which profiles the major players in global convergence markets, complete with in-depth outlines of service and equipment plans and strategies.

Datapro has become a key provider of on-site seminars and customized research to military and civilian agencies worldwide and their respective contractors.

In addition, Northern Business Information (NBI), a subsidiary of Datapro, is a full service research and consulting firm dedicated to analyzing and assessing the global telecommunications market. Subject areas covered include: world telecom equipment markets, U.S. private markets, U.S. public network equipment markets, wireless communications, U.S. Telecom markets, European telecom markets, emerging Asian telecom markets, Chinese telecom market, Indian telecom market, Latin America telecom service markets, and global network management strategies.

Datapro services are offered on CD-ROM, Lotus Notes, and/or print. The CD-ROM is available in multiple platforms including Windows, DOS, MacIntosh, and UNIX.

Status: All mentioned products are currently available. Category-Commercial Product, Commercial Service.

FEDERAL RESEARCH DIVISION/LIBRARY OF CONGRESS

Point of Contact: Robert L. Worden, Ph.D., Acting Chief

Address: Federal Research Division, Library of Congress, Washington, DC 20540-5220

Phone: (202) 707-9905

FAX: (202) 707-9920

Email: worden@mail.loc.gov

Technology, Product, or Service Keywords: fee-based research and analytical services — foreign and domestic.

Description: The Federal Research Division of the Library of Congress provides research and analytical services and products to U.S. Government agencies on a transfer-of-funds basis. Among its services and products include: document delivery, foreign-language abstracting, research and analysis, writing and editing, automation, primary research material, translations, bibliographies, studies and reports, databases, and multimedia.

Status: Government-Funded Research

THE LIBRARY OF CONGRESS

Federal Research Division

The Library of Congress' Federal Research Division (FRD) is dedicated to performing international and domestic research and analysis exclusively for agencies of the United States Government on a transfer-of-funds basis.

FRD has 50 staff members organized into two geographic area specialty sections, including a dedicated S&T unit with a global focus, and a production management section which is responsible for editing, graphic art, and automation. The staff uses the extensive foreign serial and monograph collections of the Library — which subscribes to some 200,000 serial titles, 80,000 being of foreign non-English language origin — and undertakes both social science and technical research. FRD analysts have impressive language capabilities and can conduct research in more than 25 languages, translating their own documentation as needed for particular projects.

FRD collects, analyzes, and evaluates materials available in the Library of Congress and other repositories and databases to produce document delivery, analytic studies, bibliographies, chronologies, abstracts, translations, automated databases, and other client-directed services. FRD produces the widely used Area Handbook/Country Studies Series both in hardcopy and electronic formats and has developed public-use databases offered by the Library of Congress on the Internet on missing in action and unaccounted for personnel from the Korean War, the Cold War, and the Vietnam Conflict. FRD products have been developed using a variety of multimedia and multiprocessing technologies. Depending on client needs, products are developed either in hard-copy or electronic formats (or both) and delivered by traditional means as well as state-of-the-art electronic media.

Oxford Analytica, Inc.

Point of Contact: Arnold Nachmanoff or Duncan Wood

Address: 1501 M Street, N.W., Suite 600, Washington, D.C. 20005

Phone: 202 739 0290 or 0293

Fax: 202 659 8287

Technology, Product or Service Keywords: daily analyses of international political, economic, or business developments, free text search and retrieval, Boolean search, index plus database, text indexing, UNIX

Description: *Oxford Analytica* is an international consulting firm drawing on over 750 senior faculty members at Oxford University and other major universities around the world. Founded in 1975, *Oxford Analytica* has built an international reputation for seasoned judgement in assessing implications of national and international developments facing corporations, banks, governments and international institutions. The reputation of the company rests on its knowledge of which scholars are preeminent in their fields and its ability to harness their expertise. It is a unique bridge between the world of ideas and the world of enterprise.

Oxford Analytica's core services rest on a systematic and continuous tracking of world events. This watch translates into a Comprehensive Club Membership service: daily electronic delivery of (1) the **Oxford Analytica Daily Brief**, which includes an Executive Brief and 4-5 analytical commentaries (2-3 pages each) relating to the major political, economic, and business developments which shape the investment and business climate worldwide and (2) the **Regional Services**, which include the **East Europe Daily Brief**, the **Asia Pacific Daily Brief**, and the **Latin America Daily Brief**, each of which comprises 1-3 articles daily relating to the major political, economic, or business developments in the region, as well as a specialized one-page Executive Brief.

In our presentation, we will describe *Oxford Analytica's* history, its production process, the **Daily Brief** global and regional services, and its proprietary **OxBrief** database software. In our exhibit, we will provide examples of the product and demonstrate the use of the database software.

Status: **Oxford Analytica Daily Brief services** -- Commercial Product
OxBrief Database Software -- Commercial Product

Desktop Data, Inc.

Point of Contact: Betsy Harris
Address: 1129 20th Street, NW, Suite 400
Washington, DC 20036
Phone: 202-331-2020 **Fax:** 202-331-2024

Technology, Product, or Service Keywords: NewsEDGE

Description: NewsEDGE is the product of Desktop Data, Inc. NewsEDGE is a real time news and information monitoring system which manages the integration and delivery of multiple real time information sources to the local area network environment. NewsEDGE supports information feeds from standard commercial news providers, internally generated information feeds, as well as providing a doorway to other information services such as live video news.

The NewsEDGE client software supports a variety of end user platforms: DOS, Windows, Unix, Mac, Notes, Email, and Lotus Notes. NewsEDGE focuses on four areas of news management: realtime news monitoring, filtering, searching and linking news to other applications.

NewsEDGE, available since 1989, recently won the "Breakout Company of the Year" award given by the Information Industry Association. At this time there are 55,000 NewsEDGE users at 300 customer locations.

Status: Commercial Product

Individual, Inc.

Point of Contact: Ellen Williams

Address: 8 New England Executive Park West, Burlington, MA 01803

Phone: (800) 766-4224 ext. 466

Fax: (617) 273-6060

Technology, Product, or Service Keywords: inference engine, "smart" search techniques for automation-aided information retrieval, knowledge discovery, relevance and relevancy, electronic information service, sources of information and data, expert system for information retrieval, smart agent, SMART

Description: Individual, Inc., founded in 1988, provides specialized business and economic news from over 480 sources to more than 55,000 clients daily. All news stories delivered are multi-dimensional compound relevancy-ranked according to client criteria, with at least 80 percent relevance guaranteed. The news can be delivered by facsimile, e-mail, Folio VIEWS, Lotus Notes and other groupware, and Internet/World Wide Web. Different types of services are available, ranging from full-text stories (*First!*), to system-generated abstracts and briefs (HeadsUp and iNews). Areas of concentration include defense, energy, finance, transportation, healthcare, high technology, datacom, and telecom.

An expert system, SMART (System for Manipulation and Retrieval of Text), based on concepts developed by G. Salton of Cornell University, processes and ranks all daily news feeds to produce minimum acceptable relevance of 80 percent. Dynamic, intelligent feedback improves output relevancy and modifies output to meet changing client needs. All news that matches a client's "profile" of information needs is evaluated for relevancy ranking and presentation. The client receives stories within 24 hours of their wire transmittal to Individual.

The *First!* family of services for the enterprise delivers fully-customizable current awareness in a wide range of platforms, and provides a flexible mix of full-text and executive briefs. In addition, Individual offers a variety of services—HeadsUp, MedNewScan, and iNews—that are suitable for single subscribers and delivered as one-page faxes or e-mail messages containing only abstracts or summaries of relevant articles; full text articles are available by subscriber request. Finally, the newest service, NewsPage, for individual subscribers using Web browsers, offers on-line access to both summaries and full text news.

The next release of *First! for The Web*, in June 1995, will provide both a daily news feed and server-based software featuring full navigation to previous days of news and an optional full-text search engine. The software, when installed on the client's internal Web server, will automatically recognize the daily news delivery from Individual, create underlying directory structures, and provide end-user navigation for the entire story database. The initial release of the software will run on Sun-based servers running SunOS 4.1.3.

Extension of the SMART system to languages other than English, its use as an inference engine,

and archival applications are potential future developments. Individual is also researching product extensions geared to specialty areas of health and medicine, and exploring innovative publication formats and alternate delivery timeframes.

In our presentation, Individual will briefly sketch the corporate history and describe its range of services. The balance of the presentation will focus on the *First!* family of services, describing the SMART engine and its particular advantages as an intelligent agent. Planned enhancements of services for the healthcare area will be used as examples.

In our exhibit, computers will demonstrate *First!* services on a variety of platforms (*First!* Look, an e-mail Windows shell; Lotus Notes; Folio VIEWS; Netscape and Mosaic; and Collabra Share) across a number of subject areas. Beta-level releases of the enhanced version of *First! for The Web* and *First! for Notes with Briefs*, featuring automatic e-mail delivery of personal news extracted from Notes databases, will also be shown. Hard copy printouts of fax transmissions of *First!* and sample faxes of Individual's briefs-only services, including HeadsUp and MedNewScan, will be available. Finally, Individual, Inc., will provide additional materials, including current information sources, current clients, corporate history, and product literature.

Status:	iNews	Commercial Service
	HeadsUp	Commercial Service
	<i>First!</i>	Commercial Service
	<i>First! for Notes</i>	Commercial Service
	<i>First! for InterNotes</i>	Commercial Service
	<i>First! for The Web</i>	Commercial Service
	<i>First! in Brief</i>	Commercial Service
	<i>First! Company Tracker</i>	Commercial Service
	NewsPage	Commercial Service
	MedNewScan	Commercial Service
	Physicians NewScan	Commercial Service
	Product tracker	Commercial Research
	NewsPage for the Enterprise	Commercial Research

**Thursday Afternoon
SESSION 3**

Plaza A, Room #3

**ELECTRONIC
DOCUMENT MANAGEMENT
AND PUBLISHING
(CONTINUED)**

TRW

Point of Contact: Preston Junkin

Address: TRW Environmental Safety Systems Inc.
2650 Park Tower Drive, Suite 800
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Fax: (703) 204-8560

Technology, Product, or Service Keywords:
Electronic document and records management

Description:

InfoSTREAMS/RDMS is an electronic document and records management environment developed by TRW over the past three years for the Department of Energy. It provides many functions and systems characteristics that are in demand by the Civil Federal and military communities, including:

- Electronic document management and work flow.

- Electronic records management.

- High volume document imaging, OCR, and secure optical storage.

- Document retrieval via full text search, index field search, or intuitive queries (*"find documents that talk about the same subjects as this paragraph"*).

- Text and image retrieval.

- Distributed, client/server architecture.

- Integrated COTS solution.

This 10 minute video will discuss the purpose and use of the system, architectural philosophy, and general hardware/software characteristics.

Status: In pilot deployment at two sites, >20,000 pages imaged.

Xyvision, Inc.

Point of Contact: Judy Hall Cox

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Phone: 617-245-4100

Fax: 617-246-5308

Technology, Product, or Service Keywords: information processing, compound document management, workflow management, publishing, client/server, UNIX

Description: Since 1983, Xyvision has been a leader in developing innovative solutions that meet the needs of publishing professionals. Xyvision will talk about compound document management solutions in our presentation on Thursday at 2 p.m. and will demonstrate Parlace Document Manager and Parlace Publisher in the exhibit area.

Parlace Document Manager (PDM) is a client/server information management system that stores document elements as information objects in a central database, allowing these elements to be shared and reused in multiple documents. PDM supports objects of varying sizes and provides version control, built-in workflow, and content management that automate editorial processes for large, complex publishing projects. It is well suited for use in publishing environments with large amounts of text, graphics, and other data that are formatted and published in multiple versions or on multiple media.

Parlace Publisher goes beyond traditional composition and pagination systems by automating the entire publishing process—from input of text and graphics to output of fully composed paginated pages, film separations, or electronic output. Designed to operate in an open publishing environment, Parlace Publisher accepts most text, database, and graphic formats; enables live links to UNIX-based graphics programs, such as Adobe Photoshop; and outputs to a variety of post-processing applications including imposition software, Adobe Acrobat, and CD-ROM. Its speed, power, and background processing capabilities have earned Parlace Publisher the reputation as the most versatile and powerful composition system available today.

Status:	Parlace Document Manager	Commercial product
	Parlace Publisher	Commercial product

ORIGINAL PAGE IS
OF POOR QUALITY

Wang Laboratories

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Bethesda, MD 20814

Phone: 301-657-5335 Fax: 301-657-5010

Technology, Product, or Service Keywords: Work management products including workflow, imaging and records management, and related networking and integration services.

Description: Wang Laboratories is a recognized leader in workflow, integrated imaging, document management and related office software for client/server open systems. It is a major worldwide provider of integration and support services for office software and networks to government and private industry.

The products highlighted in the booth include:

- **OPEN/workflow** Wang's premier product which allows an organization, to graphically automate, implement and measure an organization's business processes and fully integrate them with existing PC and host based applications.
- **OPEN/image** solutions, illustrating the range of choices in image enabling applications across a variety of platforms
- **Document Librarian** illustrating easy access and maintenance of information and address regulatory issues associated with records management.

In our presentation, Wang will provide an overview of imaging and workflow and the benefits these technologies provide. The major components will be discussed, and information will be provided on areas to consider before implementing a system.

Hughes Information Technology Corporation

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Technology, Product, or Service Keywords: Optical Character Recognition (OCR), Scanning and Hardcopy Media Conversion, Lexicon-based Spell Checking, Contextual Processing, Reject Re-entry Data Fusion and Integration

Description: Competitive electronic imaging systems are emerging due to rapidly declining processing power and storage costs. Imaging scans and converts information on paper to electronic pictures. For applications involving large quantities of paper documents, the resulting pictures are further processed by optical character recognition (OCR) systems, resulting in a text representation (e.g., ASCII) of the original document. Current OCR accuracy and speed varies from one implementation to the next, and greatly depends on each particular application. OCR accuracy can be improved by integrating recognition results from multiple systems and using a combination of automated error correction tools and human-assisted reject re-entry capabilities.

We describe the HughesReader: a system for accurately converting hardcopy documents containing both hand and machine printed information to electronic text at speeds up to 10,000 pages per day. HughesReader features include form recognition, image skew correction, text and information extraction, character enhancement and recognition, automated OCR error correction, and reject re-entry tools.

We present performance benchmarks obtained both in nationally sponsored character recognition tests, as well as customer proctored insurance form processing trials. Our accompanying demonstration system provides a live exhibition of high accurate hand and machine printed OCR, designed for speeds of under three seconds per document page.

Status: HughesReader - Commercial Prototype

AUSPEX SYSTEMS, INC.

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Technology, Product, or Service Keywords: Open Source / World Wide Web (WWW) / Intelink Data Repository, UNIX, Open Systems.

Description: These aren't easy times for information systems managers, or for that matter, the organizations that employ them. The unprecedented revolution in both information technology and information production taking place in the world today is far more significant than anything that has happened before in recorded history. The future of the government and corporations alike hinges on how well we deal with this information revolution. Our ability to adapt to this extraordinary time of change is directly dependent upon having large amounts of information available from which we can derive new ideas to deal with and exploit our rapidly changing environment. All of a sudden, information consumers want access to a much wider variety of data on situations around the world and they want as much information as possible, as quickly as possible.

Auspex Systems, founded in December 1987, is a leading supplier of high-performance network data servers and advanced network services that improve response time, network throughput and on-line storage capacity while consolidating data and simplifying network management in distributed computing environments. Auspex offers an enterprise-wide solution for storing and making accessible a wide range of data to a heterogeneous environment of client workstations. Additionally, the standards based open architecture of the Auspex NetServer enables the incorporation of the large variety of intelligent document retrieval packages and specialized hardware for retrieving, filtering and categorizing large textual databases and real-time feeds.

Today, Auspex NetServers are deployed as the central data repository by many organizations, commercial and government alike. For example, TASC utilizes an Auspex NetServer configured with 80GB of data storage as the central data repository for the IC-ROSE system. Terabytes of data are housed on Auspex NetServers providing on-line data services at many of the new commercial on-line service providers. A new multimedia division at a major financial information provider will be installing a 350GB+ NetServer for a video store and forward trading floor application. Auspex NetServers were recently selected by Los Alamos Laboratory to assist in meeting their mass storage requirement in the Central Computing Facility. In addition to meeting the file storage requirements of the laboratory, the Auspex NetServers will be used to support a distributed supercomputer environment. Previously, when an application was divided between supercomputers the data needed to be duplicated on each machine, now the supercomputers can access one source off shared data. An Auspex NetServer is an integral part of the technology used to trade and sell fixed income products at Bear, Stearns & Co., Inc. The Bear Stearns Financial Analytics and Structured Transactions Department, or FAST, is a firm-wide resource for general financial expertise.

Additionally, many commercial and government sites are utilizing Auspex NetServers as the central data repository for their World Wide Web (Intelink) implementations. The following is a high level overview of the Auspex NetServer as the WWW data repository.

IS managers have begun to build new information infrastructures and address new design issues. How do they manage Web data? Who has access? What types of data are to be made available? How critical is the availability of the data? What happens when services become unavailable? The questions and issues are numerous.

The keys to implementing Web services are to implement a design that allows accessibility and control; data integrity and manageability; contingency benefits; high availability; and performance.

HTTP information and HTTP requests should be independent of each other. Hardware to serve the on-line storage requirements should be separate from HTTP request servers to allow platform independence and scalability. This allows allocation of resources where they are most needed. High volumes of HTTP requests do not equate to large information storage requirements. As an example: users may have a need to frequently access a small subset of data. As the frequency of requests increase beyond current handling capabilities, additional HTTP request servers can be added to handle the increased load of an HTTP page (or information). Of course, the opposite could also be true, there could be a large subset of HTTP information on a select topic that is accessed occasionally.

HTTP page data stored independently from HTTP request servers allows Web administrators to manage the information server and its associated performance and storage issues without compromising the HTTP request servers' performance. Platform independence and separation of Web HTTP services will provide flexibility to manage a high volume resource as effectively and efficiently as possible.

Web users will be accessing terabytes of valuable information consisting of text, photos, imagery, videos, and more. To gain maximum benefit from network information resources such as the Web, Auspex Systems' NetServer(s) should be utilized as the Web HTTP information server of choice. Auspex NetServers are reliable, modular, scalable in performance and growth, offer flexible data management tools, and have an extremely high data availability ratio.

Auspex NS 7000 NetServer: The Product

- highest reliability — *observed 99.986%* system availability
- highest customer satisfaction ratings in the industry
 - 100% reference-able installed base
 - 100% "would buy Auspex again" according to an independent survey (Workstation Advisor)
 - Ranked #1 "Real World Performance" by International Data Corp.
 - Auspex guarantees customer satisfaction with an unrestricted right of return if NetServer doesn't meet expectations
- highest performance — 4643 SPECnfs_A93 OPs/Sec
- highest connectivity — 30 Ethernet, 8 FDDI SAS (4 FDDI DAS), 1 ATM
- highest capacity — 900 GB, *all* of which is high-performance

In summary, Auspex NetServers have been selected and continue to be selected from a broad field of vendors because of the outstanding performance, scalability and reliability, coupled with superior price performance.

Status: Commercial off-the-shelf

**Thursday Afternoon
SESSION 4**

Terrace Room #1

**INFORMATION INDEXING,
DISCOVERY
AND RETRIEVAL**

(CONTINUED)

Illustra Information Technologies, Inc.

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Technology, Product, or Service Keywords: object-relational database management system, multimedia assets, DataBlade modules, DBMS

Description: Illustra offers the world's first object-relational Database Management System (ORDBMS), marrying the best features of object and relational database management systems. When the Illustra Server™ is combined with the DataBlade™ module for your data -- a plug in module that gives your database expertise for a specific data type -- the combination becomes the first DBMS that is "content aware" for complex information data types such as video, audio and images. The expertise for managing data is in the database manager, allowing the application to focus on the solution instead of dealing with the complexity of multimedia data.

Current DataBlade modules available include: 3D Spatial DataBlade, 2D Spatial DataBlade, Image DataBlade, Basic Image Query DataBlade, TimeSeries DataBlade, Text DataBlade, Text Conversion DataBlade, Web DataBlade, Video DataBlade and S-Plus for Illustra.

The Illustra Server is available on SunOS, Solaris on Intel, Solaris on SPARC, Silicon Graphics IRIX, DEC Alpha and Windows NT platforms.

In our presentation, Illustra will provide corporate background information and describe the Illustra multimedia asset management system, emphasizing how a single product can manage information as diverse as video, images, spatial information and time series data locally or over the World Wide Web.

Status:	Illustra Server -	Commercial Product
	3D Spatial DataBlade -	Commercial Product
	2D Spatial DataBlade -	Commercial Product
	Image DataBlade -	Commercial Product
	Basic Image Query DataBlade -	Commercial Product
	TimeSeries DataBlade -	Commercial Product
	Text DataBlade -	Commercial Product
	Text Conversion DataBlade -	Commercial Product
	Web DataBlade -	Commercial Product
	Video DataBlade -	Commercial Product
	S-Plus for Illustra -	Commercial Product

Point of Contact: George F. Smith

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Technology, Product, or Service Keywords: full text search and retrieval, fuzzy logic searching, data analysis, client-server architecture, application development toolkits, UNIX, Windows.

Description: The Memex Engine, the information management environment for the PATHFINDER and SENTINEL projects, provides unparalleled access to mixed and dynamic structured, unstructured and large data objects. This is achieved without loss of the natural structure of the document or database format and allows access by field or by content. The conventional approach (access via indexing or relational tabling) predefines permitted search options and strategies and as these are never fully comprehensive, they devalue the data resources that users seek to exploit.

The Memex Engine provides full content search access and real time edit capability without any need for prior indexing or relational structuring of the data. The importance of this cannot be overstated. The value of any system for exploiting data is limited by its ability to find relevant information. Therefore the search engine that does not in any way constrain the user's search freedom provides the most powerful core imaginable for any information analysis solution.

The Memex Engine has many advanced query facilities to provide the user with the properties of both exact and inexact matching of information. The provision of powerful yet controlled fuzzy matching techniques, content/cluster analysis and much more besides will be demonstrated.

Database create, management and exploitation are simple, natural processes well suited to the way real world users seek to exploit data resources. The database model is not only simple but is comprehensive and makes all kinds of data more readily accessible and manipulable.

A variety of application modules are available for use with the Engine in several Graphical User Interface forms including MOTIF and Windows 3.1. A fully functional MOSAIC Interface will also be demonstrated showing WWW style manipulation of the data on the Engine.

We have developed interfaces that link our powerful information retrieval capabilities with data from other applications and sources. Because we use a simple data model, it is particularly easy to embed links to other data objects. These links can then be created and modified in real time without denying other users search access.

The power and flexibility of the Memex Engine allows the deployment of a unique legacy and data warehousing access application across data types from many sources, encompassing many styles with many applications views. The power of cross data set matching and searching provides the user with an information domain that is unequalled.

Status:	Memex Information Engine	Commercial Product
	Memex Applications:	
	Memex for Motif	Commercial Product
	Memex for Windows	" "
	WAR! (WP Integration)	" "
	Criminal Intelligence	" "
	Sentinel (Memex Internet Access)	" Prototype
	Memex Toolkits:	
	UNIX	Commercial Product
	Windows	" "
	Windows '95	" Prototype

Architext Software

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Technology, Product, or Service Keywords: free text search and retrieval, text browsing, text indexing, subject grouping, abstracting, hypertext linking, distributed text databases, UNIX

Description: Architext Software offers a highly distributed text-management engine for intelligent concept-based retrieval and sophisticated interactive browsing. Concept-based searching retrieves relevant documents even when they contain none of the query words. For this, no external knowledgebase is required. Browsing tools offer useful new ways to view data. Automatic Subject Grouping, for example, groups query-result items by subject.

Highly distributed design allows the transparent (and simultaneous) use of multiple distributed databases, with appropriately integrated results. The Architext engine is available for Unix servers as a plug-and-play application for Web servers, and as an SDK, for its embedding in custom applications.

Status: Commercial Product

ConQuest Software, Inc.

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Keywords: Information Indexing, Discovery and Retrieval
Natural Language Capabilities
Description: Architectures for Text Management Productivity

ConQuest Software, Inc. provides a suite of text management software tools distinguished by an "architectural" approach to text management productivity. The company's development philosophy has yielded a series of open, extensible frameworks for text processing products and applications. These include: a modular, component-oriented processing pipeline, a true multi-threaded, multiprocessing client/server design, a server for agent-assisted access to heterogeneous information sources on the Internet, and the unique incorporation of a true semantic network of word meanings and word relationships to drive the flexibility, ease of use and accuracy of text retrieval and other full-text management applications. ConQuest has earned broad acclaim as "best of breed" from software engineers and integrators who value its ease of integration, scalability and reliability, and from information end-users who value its ability to find "the needles in the haystack" that other text retrieval products miss. ConQuest has received strong support from a range of Federal Government agencies and programs, as well as a growing list of commercial partners and customers.

ConQuest's fundamental invention remains its semantic network knowledgebase. The company delivers a baseline, English language semantic network of 340,000 word meanings and 1.6 million word links with every copy of its software. The semantic network is a structure which represents each unique meaning of a word, as well as its part of speech, as a distinct node in the network. That node, in turn, points to a rich set of related words and concepts. Each of these links is assigned a weight, based on its "semantic" distance from the original term.

ConQuest uses the semantic network, in a fashion transparent to the user, to expand query words to their related terms and concepts. It then searches for those related terms, establishing a stronger body of "contextual evidence" that a particular document is, in fact, relevant to a user's query. Unlike any other text retrieval system, the semantic network enables the user to maximize both precision and recall, making for more accurate and productive information searching than other products afford.

The semantic network differs in several significant ways from the simpler and more limited structure of a thesaurus:

1. It represents multiple word meanings and parts of speech, and permits the user to select the specific meaning appropriate to his/her search.
2. It supports a far richer set of links than is typically found in a thesaurus. These include meaning-based links such as synonyms (happy and glad), antonyms (happy and sad), related

words (happy and jovial) and contrasted words (happy and sorrowful). They also include other types of hierarchical relationships, such as child-of (sphere is a child of geometric volumes), parent-of (sphere is a parent of soccer ball) part-of (foundation is part of the concept structure) or kind-of (strawberry is a kind of fruit).

3. It is derived from multiple, existing lexical sources, including full dictionaries and thesauri.

Moreover, the semantic network is a flexible and robust framework. It can be populated with words and concepts representing vertical subject domains, other types of hierarchical relationships or foreign lexical information. It can even be populated with groups of syllables.

ConQuest "componetizes" its indexing, query and document display processing modules, to a degree unmatched in the text retrieval industry. This affords integrators exceptional flexibility to adapt and integrate ConQuest capabilities into complete text and document management solutions. It affords ConQuest itself an easy, elegant path to adding and upgrading features.

The company's APIs (application programmer interfaces) further reflect a commitment to flexibility and integration. ConQuest provides complete low-level, high-level and client/server APIs, as well as Visual Basic and Powerbuilder interfaces. APIs are symmetrical across ConQuest's various engines and interfaces, facilitating the creation of applications which combine, for example, archival search and retrieval with real-time filtering of documents.

ConQuest's client/server design exploits multi-threading, multi-processing and parallel processing, to optimize the allocation of computing resources, maximize flexibility and scalability in system configuration, and minimize the risk of system failure. Six, independent server processes communicate via the TCP/IP protocol, and can be distributed across multiple CPUs or actual servers, including heterogeneous servers on wide area networks. With its ability to support multiple search servers, the system was designed for very high performance, very large-scale applications. It successfully supports multi-gigabyte commercial information services, has completed benchmarking of 100-gigabyte databases, and is undergoing stress testing for 500-gigabyte databases.

To meet the requirements of the Global Change-Assisted Search for Knowledge prototype, ConQuest and its partners have developed a server which supports seamless access to and retrieval of information from heterogeneous, geographically distributed information databases. The NetQuest server incorporates a meta-data server, query translation agents, and a results server, moving a step beyond the current generation of "spiders" and "web crawlers" in its ability to locate, route, retrieve and merge results into a relevant and cohesive whole.

Through its creation and deployment of a semantic network, ConQuest has successfully combined advanced statistical processing with elements of true, natural language processing to deliver a powerful, yet easy-to-use text management capability. The semantic network, the processing pipeline, the client/server design and products such as the NetQuest server reflect our architectural approach to providing best-of-breed software tools, and enabling text management productivity. Users are benefiting from this approach within enterprises, through online services, on CD-ROM products, and on the World Wide Web.

OpenText Corporation

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Technology, Product or Service Keywords: Text search and text retrieval, text query, text view, SGML, NT, UNIX, Windows, Mac Client

Description: See Attached Sheet

Status: Text Search/PEM & SGML - Commercial Product
Text Search - Commercial Product
Text Query - Commercial Product
Text View - Commercial Product
Latitude - Commercial Product Beta Release

OPEN TEXT CORP.

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Executive Vice President

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Senior VP, Technology

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Text Retrieval Solutions with Unparalleled Speed & Flexibility

Founded in 1991, Open Text Corp. commercialized a major technological breakthrough which received international recognition when computer scientists at the University of Waterloo, Ontario, Canada developed a revolutionary text retrieval engine in conjunction with the Oxford English Dictionary computerization effort. No existing technology was adequate to automate a publication with more than 22,000 pages, 60 million words, 2.4 million quotations, and over 80 complex textual structures. The resulting technology boasts unparalleled flexibility and speed in an open architecture environment.

A key attribute of the system is that it is scalable to an infinite degree. In other words, if your collection of data is a couple gigabits or in excess of a terabyte, Open Text searches it identically and at the same high speed delivering response times of two seconds or less. Traditional systems employ an "inverted word" technology that require "stop words," whereby the Open Text Solution searches words or phrases without regard to their content and yields results almost instantly.

The corporation opened its United States operations in late 1994 in response to the overwhelming interest shown by Fortune 1000 companies and government organizations. Open Text Corp. views "strategic alliances" with superior systems integrators, value-added resellers, and embedded technology integrators as one of its critical success factors and, therefore, would welcome invitations to discuss how best we can solve the document management issues of both commercial and government clients.

**ORIGINAL PAGE IS
OF POOR QUALITY**

The Difference will blow you away...

- Phrase searching
- No need for stop words
- Fully open API
- Native-mode SGML
- No scalability limits
- Internet / WWW compatible



Logicon, Inc.

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Technology/Product Keywords: profiling tools, automatic profile generation, filtering algorithms, document management, user-friendly interfaces

Description: This presentation will address development under way to significantly enhance the functionality of the Logicon Message Dissemination System (LMDS). Emphasis will be placed on the challenges inherent in moving from boolean search technologies to more sophisticated approaches while enabling customers to leverage their investment in a proven, effective system.

LMDS is a content-based text filtering system rooted in boolean query technology. It is the fastest real-time text routing system available today. It has recently been benchmarked on a Sun workstation running a 1,000-character document against 100,000 50-term profiles in a third of a second.

For the formulation of user interest profiles, LMDS includes a sophisticated boolean text query language supporting various wildcards, full boolean logic, word and character proximity, searches targeted to specific zones of the document as defined by a rule-based grammar, and context restrictions. Profile types include *dissemination* profiles, which identify the requirements of each recipient individual or group; *restriction* profiles, which preclude dissemination to unauthorized recipients; *global* profiles that may define complex concepts or synonymous terms and may be referenced in other profiles; and *selection* profiles, which facilitate profile management by grouping the profiles in libraries.

Logicon has begun design work that will enhance LMDS with non-boolean search technologies. These technologies include automatic profile generation based on natural language statements of information need, the generation of profiles based on sample documents of interest, the incorporation of thesauri to support profile generation, more sophisticated relevance scoring of documents, the use of relevance feedback to optimize profiles, and in general a set of user-friendly tools to simplify profile creation in multiple, optional modes. Release 3.0 of LMDS, introducing several of these technologies, will be available within the year.

We intend to incorporate these and other features without sacrificing the exceptional performance advantages of our current product. We will describe the planned development,

addressing efforts under way, options under consideration, and ways in which we plan to meet the problems involved in the transition.

In our exhibit we will demonstrate a new World Wide Web interface that will allow Internet access to LMDS functionality. Hypertext documents and forms are used to write profiles. Back-end software populates mail lists based on profiles, and mail lists are provided as hypertext documents. Links from mailfiles point to message document files. We will also demonstrate LMDS for Lotus Notes, a special version of LMDS designed to run with Notes, adding a real-time content-based dissemination capability.

Status:	LMDS -	Commercial Product
	LMDS 3.0 -	Development work under way
	LMDS for Lotus Notes -	Commercial Product
	Web interface for LMDS -	Commercial Prototype

**Thursday Afternoon
SESSION 5**

Terrace Room #2

**IIDR - NATURAL
LANGUAGE
CAPABILITIES**

**Exhibit Proposed for
Open Source Industry Day, 15-16 June 1995**

Point of Contact: Ralph M. Weischedel

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Technology, Product, or Service Keywords: Information collection/acquisition/discovery/retrieval

- "Smart" search techniques for automation - aided information retrieval

Exploitation tools for production/analysis/use

- Robust speech and language understanding technology
- Natural language understanding, especially to extract names, places, and relationships

Description: Live demonstrations of the following:

1. **HARK™.** The HARK™ Recognizer is a real-time, continuous speech recognition software system that uses Hidden Markov Modeling techniques to achieve very high recognition performance. The software runs on audio-equipped platforms and can be easily interfaced to applications and systems using its application program interface. Applications integrated with the HARK Recognizer give end-users the power to command, control, enter and retrieve information – all by voice. And, since the HARK system uses the audio interface supplied with the user's workstation, it requires no additional specialized digital signal processing hardware.

In short, HARK Recognizer software offers developers, integrators, and workstation manufacturers the best in real-time, continuous, speaker-independent or speaker-dependent speech recognition available today.

2. **IdentiFinder™.** IdentiFinder finds names of new and previously known
 - Corporations
 - People
 - Other organizations
 - Locationsin any text, even without capitalization information.

IdentiFinder automatically finds variations of a name (aliases): for example, after finding General Motors Corporation, IdentiFinder would also identify aliases like GM and General Motors.

3. **PLUM.** BBN's PLUM (Probabilistic Language Understanding Model) is an automated data extraction system that processes text intelligently at a much faster rate than a person using only manual techniques. It can accurately extract specific relevant information such as company names (including abbreviated versions), locations, and joint-venture events, and recognize relationships among different entities. PLUM also provides a clearly formatted summary report of this information that you can use to perform analyses, produce reports, and populate databases. The system even indicates, by color coding, the degree of confidence it has that a specific item meets your selection criteria.

4. PINPaper.

The Personal Internet Newspaper (PINpaper) allows you to:

- Register profiles of queries to newsgroups (bulletin boards). These queries are run continuously, finding information of direct relevance to your interests.
- Define rules for processing incoming electronic mail so that selected messages can also appear in your paper.
- Design the order and style in which information from newsgroups, electronic mail, searches by intelligent agents and in-place information sources on the World Wide Web is collected and presented in your paper.
- Create automatically generated newsletters and reports based on your expertise and private database searches available from the World Wide Web.

Status:

HARK™ - Commercial Product
IdentiFinder™ - Government-Funded Prototype
PLUM - Government-Funder Prototype
PINPaper - Commercial Prototype

CLARITECH CORPORATION

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Point of Contact: Cindy Wright

Internet address: info@clarit.com

The CLARIT[®] Information Management System is a suite of advanced text-processing and information management tools that rely upon key CLARIT technologies including:

- Fast natural-language text processing
- Concept-based matching and relevance ranking
- Automatic discovery of knowledge resources, such as thesauri, concept clusters, and word variants, based on information from the databases being searched. These resources enable the system to self-calibrate to new subject areas. No "knowledge engineering" is required.

CLARIT tools are available to OEMs, systems integrators, government contractors, and large corporations as stand-alone applications or as API tool sets. CLARITECH will also undertake special projects to configure and customize any of these tools.

Runtime Applications include:

- Interactive Retrieval - Provides interactive use of CLARIT client/server text retrieval and associated query-augmentation, document display, and hypertext browsing functions. Support for scanning and OCR integration, foreign languages, and forthcoming distributed indexing for handling terabytes of data.
- Internet Retrieval - Supports CLARIT retrieval of text over the World Wide Web using browsers such as Mosaic and Netscape.
- Electronic Archive Creation - Supports the scanning/OCR, categorizing, and viewing of documents.

API Tools include:

- | | |
|---|--|
| • Indexing and Retrieval | • Concept Cluster Discovery |
| • Routing (Clipping based on interest profiles) | • Word (Spelling) Variants |
| • Database Selection (auto query-routing) | • Text (including OCR) Correction |
| • Domain Lexicon Discovery | • Document Summarization |
| • Query Augmentation using related terms | • Extraction (relation and entity finding) |
| • Thesaurus Discovery | • Natural-Language Parsing |

SRI International

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Technology, Product, or Service Keywords: Text Processing, Information Extraction, FASTUS

Description: FASTUS is a system for extracting information from free text in English, and potentially other languages as well, for entry into a database and other applications. It works essentially as a set of cascaded, nondeterministic finite state automata.

FASTUS is most appropriate for *information extraction* tasks, rather than full text understanding. That is, it is most effective for text-scanning tasks where (i) only a fraction of the text is relevant; (ii) there is a pre-defined, relatively simple, rigid target representation that the information is mapped into; and (iii) the subtle nuances of meaning and the writer's goals in writing the text are of no interest.

The operation of FASTUS is comprised of four steps.

1. Triggering: Sentences are scanned for key words to determine whether they should be processed further.
2. Recognizing Phrases: Sentences are segmented into noun groups, verb groups, and particles.
3. Recognizing Patterns: The sequence of phrases produced in Step 2 is scanned for patterns of interest, and when they are found, corresponding "incident structures" are built.
4. Merging Incidents: Incident structures from different parts of the text are merged if they provide information about the same incident.

Many systems have been built to do pattern matching on strings of words. The crucial innovation in the FASTUS system has been separating that process into the two steps of recognizing phrases and recognizing patterns. Phrases can be recognized reliably with purely syntactic information, and they provide precisely the elements that are required for stating the patterns of interest.

The system is implemented in CommonLisp and runs on both Sun and Symbolics machines. The advantages of the FASTUS system are as follows:

- It is conceptually simple. It is a set of cascaded finite-state automata. The system provides a very direct link between the texts being analyzed and the data being extracted.
- The basic system is relatively small, although the dictionary and other lists are potentially very large.
- It is effective. Only one system performed significantly better than FASTUS in the MUC-4 evaluation.
- It has very fast run time. The average time for analyzing one message is less than 10 seconds. This is nearly an order of magnitude faster than comparable systems.
- In part because of the fast run time, it has a very fast development time.

Status:

FASTUS Message Handler System	Government-Funded System
FASTUS Text Understanding System	Government-Funded Research
FASTUS for Japanese Texts	Government-Funded Research
FASTUS Tipster-Compliant System	Government-Funded System
FASTUS for Japanese Dialogues	Commercial Research
FASTUS Name Recognizer	Commercial Prototype
FASTUS Concept-Phrase Recognizer	Commercial Prototype

Other Software from The Natural Language Program of SRI'S Artificial Intelligence Center:

- **Open Agent Architecture (OAA):** A general purpose architecture for creating multi-agent systems.
- **Gemini:** A broad-coverage grammar for English, appropriate for spoken input.
- **ATIS:** Spoken Language System that allows users to ask spoken question about flights and to get information from the Official Airline Guide.
- **Language-enabled Semi-Automated Forces (LeSAF):** Spoken Language System to facilitate command-and-control training using simulation software.

Status:

Open Agent Architecture	Commercial Prototype
Gemini	Government-Funded Research
ATIS SLS	Government-Funded System
LeSAF	Government-Funded System

TextWise Company

Point of Contact: Mike Weiner, Chairman
1100 Chase Square
Rochester, NY 14604
716-325-4880 x643
FAX: 716-787-0111
email: mike@textwise.com

Technology: **DR-LINK and CINDOR; Natural language processing and retrieval; interactive and standing queries; extraction, summarization; visualization pre-processing; subject field coding; automated indexing**

Description:

DR-LINK (Document Retrieval through Linguistic Knowledge) provides natural language retrieval, extraction, routing, summarization, and visualization of very large text databases and news feeds. Processes text and matches queries on the six levels that humans utilize, morphological, lexical, semantic, syntactic, discourse and pragmatic.

The system can process challenging queries such as "What are government officials in the FFC saying about proposed legislation or regulations that impact the packaging, labeling transportation and storage of toxic chemicals across European and Eastern European borders?"

The DR-LINK system contains modules that index text, extract proper nouns, analyze and categorize content, determine the temporal, consequential and evaluative aspects of discourse, perform anaphoric resolution (that is, link people, organizations and locations within a text as each is cited through the flow of the document); summarizes documents, and provides a content summary in the form of a vector space representation of the document's coverage of over 700 specific subject fields.

The individual modules can be used together, in the full DR-LINK embodiment, or individually. For example, an intelligence organization is using the Subject Field Coder (SFC) module of DR-LINK to categorize and route video feeds. This module can also drive visualizers such as Galaxies, providing a higher order, sense disambiguated abstraction of the underlying concepts and content than is possible working at the word level.

Plans are underway to integrate DR-LINK into the PathFinder system; and DR-LINK is being adapted for compliance with the emerging Tipster architecture.

A commercial customer of TextWise is using DR-LINK to index, classify and retrieve approximately 30 gigabytes of full text from multiple databases, and plans to expand the collection to more than 300 gigabytes.

CINDOR is a **cross language implementation** of DR-LINK, with the ability to allow a natural language search in one language to be executed across multiple language databases. We are currently demonstrating a proof of concept prototype where an English query retrieves documents in English, Spanish and French, from full text documents in each of these languages. We plan to expand CINDOR to multiple European languages, and are interested in also pursuing Japanese.

DR-LINK and CINDOR run on a Sun SPARC 1000 server, and is also being ported to the IBM SP-2. It is accessible by a Windows and/or Mosaic client, and a Lotus Notes client is targeted for fall delivery.

Originally developed by Dr. Elizabeth D. Liddy at Syracuse University, with Tipster Phase I funding, the technology is now being commercialized by TextWise, a company founded by Dr. Liddy in 1993. Mike Weiner, co-founder and Chairman of TextWise, and Sy Manello, Consultant, will be presenting.

Status: DR-LINK is a Commercial Prototype in beta;
CINDOR is a Government Funded Prototype, being commercialized

**Friday Morning
SESSION 1**

Plaza A, Room #1

**SECURE PRODUCTS,
CAPABILITIES, PROTOCOLS,
AND ENCRYPTION**

(CONTINUED)

OpenVision Technologies

Point of Contact: Jerry Soderstrom, Federal Operations Manager

Address: 8375 Leesburg Pike, Suite 406, Vienna, VA 22182

Phone: 703.902.1030 **Fax:** 703.902.1046

Technology, Product or Service Keywords: OpenVision provides system management tools and solutions to the Unix client-server environment. The solution offering consists of 12 discreet products serving the needs of Operations, Performance, Security and Storage.

Description: OpenVision offers the following system management tools.

OpenV*Xfer: automates all aspects of software deployment over multiple and varied platforms; **OpenV*HighAvailability:** reduces the danger of service interruptions to mission-critical applications running on SUN platforms; **OpenV*EventManager:** automates the monitoring of mission critical systems, networks, databases and applications across the open distributed environment; **OpenV*Perform/Trend:** provides a single screen view of many real-time performance parameters on an unlimited number of heterogeneous open systems; **OpenV*NetBackup/HSM Extension/Robotics Extension/Database Extension:** OpenV*NetBackup with its Extensions provides enterprise backup and desktop-to-data center hierarchical storage management and file migration; **OpenV*Dfrag:** increases the performance of Oracle databases by rebuilding tables into a single contiguous extent; **OpenV*Archive:** controls database growth rates for open systems by archiving historical data at the row and table level to cheap storage; **OpenV*Secure:** is a rigorous but user friendly solution to security of distributed applications in an open systems environment; **OpenV*Gatekeeper:** offers robust access control to hosts across a network of distributed multivendor UNIX systems; **OpenV*SecureMax:** performs central audit and management of security in a UNIX distributed environment.

The above product suite will be continually exhibited and discussed throughout the day. Product White Papers will be provided to all interested attendees.

Status: All of the products are COTS compliant and in full general release.



Raptor Systems Inc.

Point of Contact: Jim Charlton - Regional Manager
Address: 8300 Boone Blvd., #500, Vienna, VA. 22182
Phone: 703-761-6703 **FAX:** 703-761-6758
Technology: application-level firewall architecture for internet gateway, subnet partitioning, secure PC remote access, virtual private networking, real-time suspicious activity monitor, real-time alarms and alerts via pager, FAX, email, audio, COTS

Description:

The **Eagle Network Security Management System** is an ENTERPRISE-WIDE, network security guardian. It protects the enterprise from the desktop/laptop(in the office, at home or in the field) through departmental subnets to the Internet gateway and beyond - to remote sites around the world; sites which can be controlled and configured from one central site via the industry's leading Graphical User Interface environment.

The **Eagle** architecture is an application-level firewall, providing user authorization, optional user authentication via Secure ID or S/Key and **Virtual Private Networking(VPN)**. VPN allows authenticated and optionally encrypted traffic over an insecure network(internet) between **Eagle** products. Our powerful **Suspicious Activity Monitor(SAM)** in *real-time* monitors network traffic and alerts the system administrator or network security officer if previously defined(by you) thresholds of acceptable traffic has been exceeded. These alerts can be any combination of audio, email, FAX, pager or a client call-out program. The **Eagle** is a time-based model, providing the flexibility of allowing or denying connections/users based on time of day, day of week or date. Examples would be to allow World Wide Web access only during non-peak hours or have the Suspicious Activity Monitor only page someone if its after hours or on weekends. The **Eagle** runs commercial-off-the-shelf on Sun, HP and IBM UNIX workstations.

Status: Commercial Product

TASC

Point of Contact: Ricki Vick

Address: 12100 Sunset Hills Road
Reston, VA 22090

Phone: (703) 834-5000

Fax: (703) 318-7900

Technology, Product, or Service Keywords: Information Warfare, Internet security,
Security integration, Firewall integration

Description: TASC is developing a laboratory designed to support an Information Warfare capability. The described lab provides the capability to mount aggressive information attacks and evaluate protection techniques. Both attack and protection techniques are used to evaluate vulnerabilities in TCP/IP network systems.

Status:	Penetration Analysis	Commercial Service
	Vulnerability Assessment	Commercial Service
	White hat audits	Commercial Service
	Product Evaluations	Commercial Service
	Secure Internet Integration	Commercial Service
	Firewall Integration	Commercial Service

INTRODUCTION

TASC has provided INFOSEC solutions to Government customers for over 25 years. A majority of that experience has been oriented toward the protection of highly classified intelligence information. Many agencies, due to budget constraints, are undergoing a migration process that facilitates the integration and interconnection of previously stand-alone networks and systems. This process presents INFOSEC problems in implementing large-scale secure networks that support the processing of multiple levels of extremely sensitive information over open access, public networks. Additionally, many organizations have realized the benefits of establishing Internet connectivity to leverage the large amounts of open source data that have proven to significantly enhance the intelligence collection and analysis process. Although operationally valuable, this migration to interconnected networks exposes systems to wider access and thus, greater risk. TASC has provided INFOSEC engineering support to the resolution of these INFOSEC problems. TASC offers extensive experience developing and implementing INFOSEC guards and filters. TASC has implemented this concept in support of customers to mediate access to Internet, and also to "scrub" messages to ensure classified messages are not released over unclassified networks.

PROPOSED PRESENTATION

TASC is developing a laboratory designed to support an Information Warfare capability. The proposed lab supports full Internet access via Internet service provider(s). The connection provides sufficient bandwidth to support World Wide Web (WWW), training, Internet browsing, and future growth, including News groups. The following bulleted items are elements of the Information Warfare lab.

INFOSEC Protection Features include:

- Access to Primary Internet Service Provider
- Screening Routers
- Bastion Host with Selected Proxy Servers
- Dial-In Access for remote access to Internet services
- Server Host to support News groups data storage
- 4 Gigabytes of Disk Storage to accommodate 3 days worth of News
-

Information Warfare (Aggression) Features include:

- Heavy Duty Auditing with Intrusion Detection emphasis
- Honey Pot and Fishbowl systems to allow study of hacker attack methodologies
- Multiple LAN segments to facilitate Aggression and Countermeasures techniques without broadcasting activities on the Internet.
-

Firewall Protected Information Exploitation Features include:

- Firewall Software Development Environment
- Protected LAN for Workstations
-

Information Warfare Lab Objectives:

- Internet Firewall Development Environment
- INFOSEC Product Evaluations
- INFOSEC Demonstrations

- Intrusion Detection Capability Development
- Guard Technology Development & Demonstrations
- Internet Risk Analysis and Mitigation (CERT Advisory Ramifications)
- Vulnerability Assessments
- Penetration Analysis
- INFOSEC Demonstrations & Customer Education
- Internet Risks & Mitigation Techniques

**Friday Morning
SESSION 2**

Plaza A, Room #2

INFORMATION

PROVIDERS

(CONTINUED)

East View Publications, Inc.

Points of Contact: Kent. D. Lee, or Glen E. Howard

Address: 3020 Harbor Lane North, Minneapolis, MN 55447

Phone: (612) 557-6456

Fax: (612) 559-2931

Technology, Product, or Service Keywords: digital link with Moscow office allows same-day newspaper transmission from Russia and CIS states. Access to Russian CD-ROM databases for science and technology.

Description: East View Publications is the world's largest distributor of information on the former Soviet Union. Our information specialties include books, newspapers, maps and gray literature from Russia and the Newly-Independent States. Other services offered by East View include document delivery services, gray literature acquisitions, with key abilities in arranging the declassification of formerly classified Soviet/Russian security studies. Established document acquisition program for aviation, aerospace, and other S & T areas. For national infrastructure information, East View has a CIS Business Intelligence Service for collecting key infrastructure data on investment sites in CIS, ranging from oil and gas, mining, and all industrial sectors. Rapid document delivery is accompanied by same-day newspaper transmission from Russia and CIS states. East View's far-ranging and diversified acquisition efforts include distribution of formerly classified Russian military topographic maps and Russian navigational charts for all the newly-independent states in the former Soviet Union and the rest of the world; e.g. China, India, Pakistan, Iran, Iraq and North Korea.

In our presentation, East View Publications will discuss the host of new opportunities for gray literature acquisition in the former Soviet Union and the wealth of new information sources available to analysts in the U.S. government. This material includes access to newly declassified Russian scientific-technical journals and a wide range of English and vernacular sources on military and proliferation literature. Journals and studies from previously classified institutes, like TsAGI, the world famous aviation Russian aviation design institute, are now being offered to Western research analysts.

East View's Industry Day presentation will discuss the ever-changing environment for acquiring formerly classified and restricted distribution scientific-technical literature in the former Soviet Union and how it affects open-source collection efforts in the U.S. intelligence community.

Status: Commercial Service

East View Publications, Inc.
Kent. D. Lee, Glen E. Howard

Title: Industry Day Presentation

"Gray Literature Acquisition in Russia and the Legacy of Soviet Secrecy: Problems of Accessing Formerly Classified and Restricted-Distribution Scientific-Technical Literature".

With the demise of the USSR, a host of new opportunities for gray literature acquisition have developed in one of the most closed societies in the world. The argument is made that the very concept of gray literature in Russian must be understood in the context of the extraordinarily high levels of secrecy, restriction and censorship which covered all aspects of Russian (Soviet) publishing until just a few years ago.

Unprecedented access to previously closed institutes and research centers has yielded a new wealth of material for government and academic specialists in the West. East View Publications has played a leading role in opening that market as a wealth of scientific and technical literature has become available along the frontier of Russian "gray literature." Journals and studies from previously classified institutes, like TsAGI, the world-famous Russian aviation design institute, are now being made available. Likewise, a host of formerly closed research and design institutes are abandoning the legacy of Soviet secrecy and opening their doors to Western vendors like East View.

Yet despite these opportunities, many challenges remain. Secrecy restrictions abound in the former Soviet Union as the legacy of many regulations that prevailed in Soviet society continue to persist. The volatility of political and economic reforms in Russia and the CIS, create an ever-changing environment for acquiring formerly classified and restricted-distribution scientific-technical literature and many new opportunities for Western scientists and academic institutions may be only temporary.

JANES'S INFORMATION GROUP

Point of Contact: Robert Loughman

Address: 1340 Braddock Place, Suite 300, Alexandria, VA 22314

Phone: 703/683-3700 or 1-800/824-0768 **Fax:** 703/836-0297

Product: Electronic information on military hardware, geo-political-military studies and real time information products.

Description: In the past few years Jane's has developed several new products, such as the Sentinel, geo-political-military country reports. In addition, Jane's has moved aggressively into electronic delivery of its information and has dramatically improved the timeliness of the delivery of that information to the consumer. In the future are plans for the internet.

Databases will be available for electronic searching.

Status: Most products available. Some discussion of future offerings.

Worldwide Government Directories, Inc.

Point of Contact: Jonathan Hixon

Address: 7979 Old Georgetown Road, Suite 900, Bethesda, MD 20814

Phone: (301) 718-8770; (800) 332-3535

Fax: (301) 718-8494

Technology, Product or Service Keywords: Information services, directory and biographical information on government and military leaders in 195 countries.

Description: Worldwide Government Directories, Inc. produces the Worldwide Government Directory, the Worldwide Directory of Defense Authorities, Profiles of Worldwide Government Leaders, and the Worldwide Government Report. The Worldwide Government Directory, the company's flagship product, outlines each country's government structure, including detailed personnel and contact information. The Worldwide Directory of Defense Authorities provides similar information for the world's military and security organizations, as well as each country's defense capabilities and base locations. Profiles of Worldwide Government Leaders offers subscribers biographical data on cabinet members and heads of state. Finally, the Worldwide Government Report provides monthly analysis of events affecting government personnel and structures. All of these products are derived from our proprietary electronic database of nearly 50,000 positions and contact information on over 16,000 offices. Available in print only now, later this year a CD ROM and other electronic delivery methods will be introduced.

Status:

Worldwide Government Directory - Commercial Product

Worldwide Directory of Defense Authorities- Commercial Product

Profiles of Worldwide Government Leaders- Commercial Product

Worldwide Government Report- Commercial Product

**Friday Morning
SESSION 3**

Plaza A, Room #3

**ELECTRONIC
DOCUMENT MANAGEMENT
AND PUBLISHING
(CONCLUDED)**

ABSTRACT
for
"Industry Day"
June 15-16, 1995
Alexandria, VA

SPEAKER: David Aaron Bayer
Electronic Publishing Products Manager
Information Dimensions, Inc.

TITLE: Strategic Considerations for Electronic Publishing: SGML, Document Management, and the World Wide Web.

ABSTRACT:

This talk will track the emerging intersection between three technological areas that are central to the future of electronic publishing: SGML, Document Management and the World Wide Web.

SGML: Standard Generalized Markup Language is a key document standard that provides a series of fundamental benefits to users in both commercial and government sectors. These include separating document structure from presentation, independence from proprietary hardware and software platforms, and reusability of document components. With the emergence of HyTime multimedia extensions, SGML is poised to expand beyond the realm of traditional documents.

Document Management: The management of documents itself is undergoing radical changes. As document management emerges from the world of archival systems, features such as workflow, component manipulation, document navigation, and advanced retrieval techniques are coming to the fore. As users rethink and redesign how they use information, document management systems are increasingly at the center of significant business reengineering efforts.

World Wide Web: The Web is the most successful SGML application in the world today. The combination of universal access and hypertext links created by the HTTP and HTML standards is introducing millions of new users to the Internet and the world of structured documents. This very success is rapidly introducing a series of publishing and document management issues to content owners, service providers, and information consumers on the Web.

As content providers bring increasingly complex and/or substantial document collections online, they face issues such as the conversion costs for publishing legacy information, ongoing production of complex, dynamic documents, and managing their link bases. Service providers must maintain and

Abstract:
David Aaron Bayer
Information Dimensions
Page Two

ensure the integrity of the document collections they put online. Information consumers are concerned with navigating to information of interest and system performance.

Looking for answers to these issues focuses renewed attention on the relationship between SGML, document management systems, and the Web. We will examine the emerging synergy that these three technologies are bringing to electronic publishing.

VITA:

Mr. Bayer is responsible for developing and leading IDI's electronic publishing initiatives. He will work to speed market comprehension of SGML and Internet technology, facilitating customer recognition of the value it can bring to their organization. Mr. Bayer will lead IDI's initiative to identify and introduce new uses of these technologies to the marketplace.

Prior to joining IDI, Mr. Bayer was Senior Applications Programmer/Analyst at the Harvard Business School where he directed and managed the transformation of Baker Library into the primary provider of electronic information services to the School. During his more than six year tenure at Harvard he sponsored SGML as core technology for Harvard Business School Information Services and implemented client-server application solutions across heterogeneous system architectures. Mr. Bayer previously served as a teaching assistant at Harvard and participated in the University Professors Program at Boston University before that.

Mr. Bayer was educated at Brandeis University, majoring in history and social theory and at Boston University.

KEY TERMS/PHRASES:

- 1) Scientific and technology development and breakthroughs
- 2) National infrastructures (communications)
- 3) Industries and their products
- 4) Electronic Publishing
- 5) World-Wide Web
- 6) Internet

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Microsoft®

Point of Contact: Debbi Conger

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Washington, DC 20015

Phone: (202) 895 2014

Fax: (202) 364 8853

Technology, Product or Service Keywords: Internet, authoring tools, SGML, HTML, multi-media, electronic documents, Windows NT, Windows 95

Description:

The information age is upon us. Increasingly, information needs to be produced in a multitude of electronic formats for wide distribution. Microsoft is keenly interested in information publishing and distribution. From desktop tools for authoring and publishing to network server technology for connecting people all over the world, Microsoft is delivering solutions. Learn about Microsoft authoring tools such as the Word Internet Assistant as well as forthcoming publishing tools for the upcoming Microsoft Network. Hear how Microsoft embraces and extends Internet technologies to speed and enhance information delivery.

Status: Commercial Product

**Friday Morning
SESSION 4**

Terrace Room #1

**INFORMATION INDEXING,
DISCOVERY
AND RETRIEVAL**

(CONTINUED)

SandPoint Hoover

Point of Contact: Thomas Prior

Address: One Canal Park, Cambridge, Massachusetts 02141

Phone: (617) 441-2242

FAX: (617) 441-2370

Technology, Product or Service Keywords: Full text search and retrieval technology, agent technology, groupware technology

Description: SandPoint Hoover™ is the most comprehensive business intelligence system for users of Lotus Notes. Founded in 1989, SandPoint Company L.L.C. creates networked systems that deliver timely external information, including real-time news, premier publications and retrospective research to corporate users. Providing a single user interface, SandPoint Hoover is an active "Information Agent" that searches, retrieves and integrates information from multiple sources, including live newsfeeds, online databases, corporate intelligence, and your internal data warehouse. Supported by Hoover, SandPoint clients work with - and learn from - a range of Information-Enabled Applications designed for specific job functions as well as easy-to-use suites of context-based solutions, including comprehensive Company PROFILES. Clients include leaders in the Fortune 1000 as well as major international, financial and professional services firms and government agencies. SandPoint is headquartered in Cambridge, Massachusetts, and is a Premium Business Partner and Value Added Reseller for Lotus Notes.

Status: SandPoint Hoover - Commercial Product

SandPoint Hoover, for integrated news and research

PARACEL

Point of Contact : Jeff Bryan

Address : 80 S. Lake Avenue, Suite 650, Pasadena, CA 91101

Phone : (818) 666-6688 **Fax** : (818) 666-6677

Technology, Product, or Service Keywords: Adaptive information filtering, free text search and retrieval, UNIX, real-time dissemination, Open Systems.

Description : Paracel is in the business of adaptive information filtering systems. It has a unique patented technology, Fast Data Finder (FDF) to fine-filter textual data streams at very high speeds. The company will establish a prime position in its chosen markets of Government, Biology and Information Services as a key business partner to successful global players. Paracel's products will be core technology building blocks that will be leveraged into added-value, service oriented businesses.

Paracel is a three year old start-up based in Pasadena, California. We are committed to developing this technology for the demanding roles of subject categorizations and story dissemination in large scale Information Service applications. Internet and its multiplicity of sources pose real information filtering challenges. Paracel, to date, has shipped 200+systems and is profitable.

Markets

As the information explosion accelerates, Paracel brings a distinctive approach to the fundamental issues of real-time document identification for the purposes of classification, routing or indexing. These are typically situations where there are large fluctuations in information throughput, making software uneconomic in peak (often crisis) situations. A document can be a DNA sequence, a military signal or a business journal article. Thus the prioritized target markets are Information Services, BioInformatics and Government.

FDF Technology

The Fast Data Finder (FDF) is developed as a pipelined parallel architecture that enables large numbers of custom chips to cooperate in retrieving, filtering and categorizing large textual databases and real-time feeds. It is best suited to situations where there is a high degree of differentiation in the possible solution set to a matching problem. In this case, the queries will be very long and complex. It is now in its third generation of development (FDF3).

Under continuous development since 1985, FDF utilizes custom VLSI chips that in combination can perform billions of pattern-matching operations per second. In retrospective mode used for the analysis of large data sets, patterns that are to be sought are loaded into the cell pipeline, together with a set of functions such as Boolean operators, approximate match specifications and proximity constraints, etc. Data is then streamed past the required patterns in the pipeline at a search rate of up to seven million characters per second; throughput speed being independent of the search complexity.

Paracel - Page 2

Multiple independent searches can be loaded into the pipeline at the same time and executed simultaneously. In real-time mode, incoming data streams, such as newswires or data feeds, are streamed in the same manner, and messages or records that satisfy a profile can be routed to the users or applications that requested them.

Architecture

FDF 3 is a cost effective and flexible product. It connects to host and data storage devices through a SCSI data interface, allowing it to be used on a wide variety of platforms. An API based on TCP/IP networking protocols and UNIX open standards make the FDF 3 easy to integrate into custom systems based on standard components.

New features released in July 1994 include cross-UNIX platform availability and virtual pipeline; a feature that allows almost unlimited query complexity and length. These developments are now packaged as Desktop and large scale Tower FDF units that almost linearly scale the FDF functionality. Towers will build stacks of 19" racks as tower building blocks.

Text Filtering Solutions

FDF can provide for approximate matching, for example dealing with misspellings and multiple transliterations of names, and is ideal for multiple languages (not only non-English, but also non-Latin, e.g. Kanji and Cyrillic) since the FDF operates on digital patterns, and is, at that level, content independent. There is a Japanese version of the FDF, and a Chinese version is under development.

As textual patterns become more complex, and the amount of processing required increases, traditional software solutions can break down. FDF comes into its own when high precision AND high recall are needed, as well as high performance.

Another attribute of the arenas where the problem sets are suited to FDF applications is where there are time sensitive and rapid throughput requirements. These are typically driven by massive amounts of complex, disparate information flows. Ease of use and speed to solution are important in these environments.

Status	: <u>Paracel FDF 3 Hardware Family:</u>
	Desktop Systems - Commercial Product
	Tower Systems - Commercial Product
	<u>Paracel Software:</u>
	ServerOne - Commercial Product
	FDF Executive - Commercial Product
	Batch Mode Search Server- Commercial Product



Verity, Inc.

Point of Contact: Paul Wagner
Address: Spring Hill Road, McLean, Virginia 22102
Phone: (703)734-1555 x129 **Fax:** (703)734-1250

Technology, Product, or Service keywords: Information search and retrieval, format and platform independent, Real-time profiling and Internet Publishing Solutions.

Description: Verity's technology is designed to make it easier for individuals, workgroups, departments and enterprises to filter, search, retrieve, analyze and navigate a wide variety of data sources to get the information they need. Powerful agents search across vast amounts of data, delivering only the most relevant information directly to the desktop. Verity is the first to offer a suite of products that are platform, database, application, and on-line source dependent.

Status:

Topic Development Kit (TDK) - Commercial Product
Topic Information Server (TIS) - Commercial Product
Topic Agents for Microsoft Windows, Motif and Apple Macintosh - Commercial Product
Topic Information Server for the World Wide Web - Commercial Product
Topic Agents for Mosaics - Commercial Product
Topic Agents for Lotus Notes - Commercial Product
Topic News Server - Commercial Product
Topic Document Entry - Commercial Product

**Friday Morning
SESSION 5**

Terrace Room #2

**IIDR - ADVANCED
TECHNOLOGIES**

Battelle Memorial Institute

**Information Access, Analysis, and Visualization Technologies:
Ready for Analysis of Open Source Information**

James (Jim) J. Thomas
Senior Staff Scientist
Battelle Pacific Northwest Laboratories
PO Box 999 MS K7-02
Richland, Washington 99352
509-375-2210, jj_thomas@pnl.gov

Technology, Product, or Service Keywords: Multimedia, Multisource Information Visualization, Free Text Analysis, Document Management, Galaxies, ThemeScapes™, and SPIRE™.

Description: Information access, analysis, and visualization technologies have been under development for over 20 years. It has only been in the last 2-3 years that these emerging technologies have begun to have the desired impact. Information Visualization (IV) technologies specifically are leading a new wave of tools for analysis of masses of multimedia multisource information. This enables for effective *understanding of the expected* and *discovery of the unexpected* within large information spaces. Information visualization is interactive; it is suggestive; it is responsive; it is dynamic and changes based on users demands, level of understanding, and scope of the problem; it enables the use of multimedia; it entertains; it teaches; it confuses; and yes, it now is the single most effective technology to produce information overload.

This presentation describes an approach to IV that involves spatializing text content for enhanced visual browsing and analysis. The application arena is large text document corpora such as digital libraries, regulations and procedures, archived reports, etc. The basic idea is that text content from these sources may be transformed to a spatial representation that preserves informational characteristics from the documents. The spatial representation may then be visually browsed and analyzed in ways that avoid language processing and that reduce the analysts' mental workload. The result is an interaction with text that more nearly resembles perception and action with the natural world than with the abstractions of written language.

Specific examples of information visualization technologies available will be presented. Galaxies, within the current NGIC Pathfinder analysis tool suite, and which has been effectively used to explore many of today's intelligence issues, will be presented using openly available information. SPIRE, the new revolutionary information visualization technology will be presented as it allows for visual analysis of themes and topic signatures within large document corpora. The end goal is not to replace reading but to provide a visual presentation that enables the analyst to read the right few documents. The technologies will be demonstrated with recent open source information, including analysis of news (CNN), message traffic, and science and technology analysis.

The development of this technology has been supported through the P1000 program, lead by Dr. Russ Rose/ORD.

HNC Software Inc.

Point of Contact: Caid, William

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San Diego, CA 92121-3728
caid@hnc.com

Phone: (619) 546-8877

Fax: (619) 452-6524

Technology, Product, or Service Keywords:

Free text retrieval and document classification, neural networks, TIPSTER, visualization

Description:

HNC, Inc. has developed an advanced, neural network-based solution to the problem of free text classification, retrieval and routing called "*MatchPlus*". *MatchPlus* uses a unified representation for words, queries and documents based on the concept of "context vectors". Context vectors encode a representation of the meaning of the associated word, query or document. Elements of the context vector, called "features" define a framework for classification, retrieval and routing of documents. The context vectors for words and documents are learned from the corpus using a neural network technique. Only the text of the corpus is needed; No dictionary, synonym list or thesaurus is required for system generation. This adaptive property of the system allows word and document context vectors to "evolve" as the usage and meanings of words change over time. Additionally, the system can automatically learn the meaning of new words based on the association with words that are already known to the system.

MatchPlus provides "retrieval by similarity of meaning" capability by representing words as real-valued vectors in a large, but fixed, number of dimensions. The components of the context vector for a particular word captures the similarity of meaning between that word and a learned set of features. The context vector for a document is generated from a weighted sum of the context vectors for the words in the document. This results in a representation that captures the context of the document relative to the learned feature set.

The context vector method is a generalization of and improvement on several past approaches to document retrieval (e.g., indexing, n-grams, content-laden word matching, etc.). It has the advantage that it is self-organizing, and that it allows unstructured queries and weighted relevance feedback iterative search (i.e., search based upon examples of known relevant documents).

The *MatchPlus* approach was selected for further development by DARPA as part of the TIPSTER Text Detection Phase I and Phase II Program. *MatchPlus* is available today as a commercial prototype system that operates on the Sun SPARC platform under Unix/X Windows/Motif.

Status: Government-Funded Research, Commercial Prototype.

Information Access Systems, Inc.

Point of Contact: Russell P. Holsclaw

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Phone: (303) 442-6224

FAX: (303) 442-4530

Technology, Product or Service Keywords: intelligent text extraction and distribution; text classification; intelligent software; fuzzy logic technology; natural language profiling.

Description: Information Access Systems, Inc. (IAS) has developed and markets text management tools based on its proprietary J-SPACE technology. Products include: the Intelligent Text Management System (ITMS), Intelligent Text Distribution System (ITDS); Intelligent Name Finder (INF), and the Judgment Base Development Tool set. The ITMS and ITDS are available on VAX and UNIX systems. The ITMS is being developed for the PC under Windows for CD-ROM publishing applications.

In our presentation, IAS will describe the J-SPACE technology and demonstrate the ITDS using an Open Source document base extracting relevant information according to interest profiles submitted in discursive form.

Status: Intelligent Text Management System (ITMS) - Commercial Product
Intelligent Text Distribution System (ITDS) - Commercial Product
Judgment Base Development Tool Set - Commercial Product
Intelligent Name Finder - Commercial Prototype

**Friday Afternoon
SESSION 1**

Plaza A, Room #1

**SECURE PRODUCTS,
CAPABILITIES, PROTOCOLS,
AND ENCRYPTION**

(CONCLUDED)

SECURE COMPUTING CORPORATION

Point of Contact: Barry Fogel
1801 Robert Fulton Dr. #400
Reston, Va 22091

Phone: (703) 758-6705 Fax: (703) 758-3594

Topics: Internet Application Gateway (Sidewinder)[™] and MLS Server
(Secure Network Server)

Sidewinder is a turn-key, Internet application gateway product for the purpose of securing an organization's internal enclave while allowing Internet services for external users, internal users, and the system administrator.

Sidewinder provides a number of key benefits , including:

- Security in Depth
- Transparent Access to Internet Services
- Remote User Authentication
- Type Enforcement
- Active Defense Capabilities
- Easy integration into existing environment
- Secure Central Administration

Secure Network Server (SNS) is designed to meet the DISA/NSA Multi Level Information Systems Security Initiative (MISSI). Phase 2(b) presently being delivered with following features:

- Two way transfer of E-Mail without attachments for networks at different security levels
- Manual review of attachments
- Fortezza functions as available
- Screen outgoing data for evidence of classification errors
- Control/Audit Important Interactions
- Source and destination filtering
- Support migration to X.400 and X.500

SecureWare, Inc.

Point of Contact: David Luther

Address: 2957 Clairmont Rd., Suite 200, Atlanta, GA 30329-1647

Phone: (404) 315-6296

FAX: (404) 315-0293

Technology, Product, or Service Keywords: Computer Security, Network/Internet Security, Encryption, Authentication, Integrity, Access Control

Description: The Internet World Wide Web has become popular because its Mosaic browser tools make everyone efficient information explorers in the vast Web of Internet data and services. The real power of the Web is the entrepreneurial frontier that it has opened. The Web empowers anyone with an idea, a computer, and a network connection to be an entrepreneur. These entrepreneurs can open their own business on a Web server with immediate access from millions of potential customers. The Web environment will revolutionize industries, from banking, which can soon be done on-line, to the music industry, which will soon provide low-cost access to new songs without the controlling influence of the record companies. The recent expansion of public access to information and commerce on the Internet brings with it a concern for security. SecureWare offers a suite of security products to protect valuable data on client computers, servers, and while in transit during Internet transactions. Our products prevent the latest Internet host masquerading, over-the-wire network snooping, operating system and application security hole exploitation, password cracking, viruses, and attacks from internal privileged users.

This presentation discusses the need for stronger security services as enterprise-wide networks for business and electronic commerce become a reality. SecureWare's products are implemented to make security an integral part of computing environments so that they prevent not only the known security attacks, but also future attacks which are growing exponentially in number. The presentation will describe ways in which secure operating systems, network authentication & encryption products, Firewalls, privacy-enhanced Email, and virus/Trojan Horse prevention products can be combined to secure an organization from internal attacks, and external network attacks.

Recently published reports from the FBI indicate that over 70% of computer attacks are from inside an organization. SecureWare's secure operating system products prevent internal and external attacks on an organization's computer data and resources. They provide additional login controls, provide access controls to computer data and resources, allow users and administrators to be assigned only the privileges necessary to perform their job rather than all privileges, and audit user actions for accountability. SecureWare's secure operating systems are an excellent choice to provide the additional security needed by Firewalls, Internet Servers, and Network Guards. SecureWare will soon be releasing Gabriel, a secure Internet Web Server based on our secure operating system platform.

SecureWare is a re-seller for Technologic's Interceptor firewall product. Interceptor is a highly secure proxy-based firewall which protects corporate computer resources from unauthorized access by external network users. Interceptor has been selected by major corporations such as Bell South Business Systems, Scientific Atlanta, AT&T Tridom, Dunn and Bradstreet, and others, as the firewall to protect their corporate computer resources and data.

SecureWare's HannaH product provides the network authentication, integrity, and encryption security that is needed to conduct business on the Internet. HannaH links into Unix and Microsoft Windows TCP/IP stacks to provide network security without any changes necessary to applications. HannaH secures ftp, telnet, rlogin, Mosaic browsers/servers, X Windows, and other TCP/IP and



OSI applications by cryptographically authenticating hosts and users, and providing cryptographic hash and encryption services for message stream integrity and privacy.

Traditional methods of searching for known viruses and Trojan Horses are becoming obsolete because the number and flavor of viruses and Trojan Horses continues to grow rapidly.

SecureWare's Troy product protects against virus and Trojan Horse attacks by allowing only "approved" applications to be used, rather than by searching for patterns of known attacks. Troy protects Unix, Microsoft Windows, and Windows NT desktop and server machines from virus and Trojan Horse attacks by allowing only "approved", cryptographically registered applications to be used.

SecureMail is a SecureWare product which provides privacy enhanced Email (PEM) on most Unix platforms. Email messages can be digitally signed and encrypted so that only the recipients can read the messages, and the recipient can be sure of the identity of the message originator.

SecureMail is a full-featured Email product which includes Multi-purpose Internet Mail Extensions (MIME) support for attachments.

Status:	SCO CMW+:	Secure Operating System	-	Commercial Product
	Gabriel:	Secure Internet Web Server	-	Commercial Product
	Interceptor:	Firewall	-	Commercial Product
	HannaH:	Network Security Services	-	Commercial Product
	Troy:	Trojan Horse/Virus Protection	-	Commercial Product
	SecureMail:	Privacy Enhanced Email	-	Commercial Product



Electronic Business Co-op Credit Card Payment System

The Electronic Business Co-op (EBC) was formed in December 1994 by Checkfree, Spyglass, Tandem Computers, and V-One to find a practical and secure solution for conducting credit card transactions on the Internet/ World-Wide-Web.

To ensure convenience for consumers and practicality for businesses, the group began by examining existing credit card transaction models. In particular, the EBC focused on the 800-number ordering systems used by catalog merchants. The EBC then formulated a technical solution based on this proven and familiar paradigm.

For consumers the EBC developed a client-side Cyber Wallet modeled graphically and functionally after a conventional wallet. The Cyber Wallet can be configured to "carry" the consumer's credit cards and related information, making electronic payment at least as convenient as it now is over the telephone. It also includes the software necessary for secure transmission with merchant servers. For merchants the EBC tied its solution on existing transaction and credit-card processing practices. The solution provides server-side cryptographic and authorization for secure transmission and processing of credit card transactions.

The EBC solution is based entirely on existing WWW standards for Hyper Text Markup Language (HTML) and Hyper Text Transfer Protocol (HTTP).

This presentation briefly reviews how telephone transactions are handled and explains how they can be conducted over the Internet/WWW. It includes a description of the security issues and solutions, and closes with answers to frequently-asked questions.

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**Friday Afternoon
SESSION 2**

Plaza A, Room #2

INFORMATION

PROVIDERS

(CONCLUDED)

Consortium for International Earth Science Information Network (CIESIN)

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Vice President and Director of Government & International Programs

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Technology, Product, or Service Keywords: Sources of information and data; Information Collection/Acquisition/Discovery/Retrieval; knowledge discovery; searching and browsing; navigating and searching across distributed, multiple heterogeneous databases; Exploitation tools for production, analysis, and use; user-friendly GUI interfaces.

Description:

CIESIN is a not-for-profit consortium currently supporting the execution of projects and programs for the National Aeronautics and Space Administration (NASA), the US Environmental Protection Agency (EPA), the US Department of Agriculture (USDA), the Agency for Toxic Substances and Disease Registry (ATSDR), the US Committee on Environment & Natural Resources (CENR), and the Department of Defense, as well as multilateral institutions and foundations. CIESIN's sponsored programs and core activities are directed toward the consortium's mission: "to provide access to and enhance the use of information worldwide, advancing understanding of human interactions in the environment and serving the needs of science, and public and private decision-making."

CIESIN provides an end-to-end framework for open source data resources, tools, and infrastructure. It is a participatory cooperative, comprised of nearly fifty major data providers and country-level institutions (governmental, non-governmental, and academic) that are working in a common open technology base, adhering to agreed upon metadata format standards, and committed to improving the long-term collection and archiving of data in spatial data standards. The core offerings of CIESIN to be described in the presentation include:

- CIESIN Information Cooperative;
- CIESIN Gateway;
- CIESIN Tools (Browsing);
- CIESIN Resources & Guides.

CIESIN's Information Cooperative is a globally distributed information system that allows user communities to catalog and share information electronically among major data archives and resource centers. The Information Cooperative's primary focus is on social, economic, environmental, and public health data and information, and a facility for single-channel access to Earth science imagery and measurements data. Access to these data resources within the *CIESIN Information Cooperative* is made possible through use of the globally distributed client-server application known as the *CIESIN Gateway*.

The CIESIN Gateway is a distributed electronic information system that speeds the task of locating and using data. The CIESIN Gateway solves this problem by electronically uniting the

various independently-maintained computer archives, communicating with them in their host format and computer system. CIESIN Gateway unlocks the door to efficiently finding and building upon data resources. The mechanics of the system, a complex arrangement of servers, databases, and sophisticated networking software, are hidden from the user. Thus, the system behaves as if it were a single information resource.

CIESIN Tools (Dynamic Browsing) have been developed as a suite of client-server based analysis, dynamic browsing, and visualization tools that enable users to dynamically browse time-series tabular data, spatial data, and to interactively manipulate key census data sets.

CIESIN Information Resources and Guides are archived as an element of the physical archives of the Socioeconomic Data and Applications Center (SEDAC) at Saginaw, Michigan or within the distributed servers of *Information Cooperative* institutions worldwide, accessible via the CIESIN Gateway and selected world wide web retrieval conventions. These include Country Guides, Dataset Guides, Organizational Guides, and issue-oriented "Thematic Guides".

Status:	Gateway Information Cooperative Tools (Browsing) Resources & Guides	Government-Funded System; Commercial & Government-Funded Service; Government-Funded Prototype; Government-Funded & Commercial Products.
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FJV COMPANY, INC.

Point of Contact: Frank J. Vega
Address: P.O. Box 187, Arlington, Virginia 22210
Phone: 703-271-5988/1-800-767-7710 **Fax:** 703-271-5989

Technology, Product, or Service Keywords: Online Database, Public Policy Research, Abstracts, Full Text, Document Retrieval, Monthly Alert

Description: The FJV Company has developed *ResearchBase*, the only information resource available today emphasizing the identification and tracking of ongoing, forthcoming, and recently completed research and publications addressing public policy, global economic, international relations and foreign policy issues. *ResearchBase* is unique among information resources because it provides access to the research and publications of organizations not available anywhere else, it provides additional service besides online information, and it is extremely affordable. *ResearchBase* contains thousands of abstracts and hundreds of full text documents from research organizations, think-tanks, university research programs and publishers--with more being added daily.

ResearchBase identifies and tracks research and publications not available in any other information resource. Prominent policy research organizations including: ACCESS, American Enterprise Institute, Atlantic Council, British American Security Information Council, Brookings Institution, CATO, Center for Defense Information, Center for the Study of American Business, Center for Strategic and International Studies, Defense Budget Project, Economic Policy Institute, Foreign Policy Research Institute, Heritage Foundation, International Monetary Fund, Organization for Economic Cooperation and Development, RAND Corporation, and the United Nations are all available within *ResearchBase*. In addition to the range of information available through *ResearchBase*, the FJV Company also provides users with our exclusive **HEADLINES** service.

HEADLINES is a monthly, electronic, customized newsletter listing newly identified or updated *ResearchBase* abstracts addressing the issues (up to 3) a subscriber has indicated are most important to them. Through **HEADLINES**, users receive an easy to read, quick to review update of research and publications they need to know about. Furthermore, users also have the option to change the contents of their **HEADLINES** newsletter monthly and receipt of **HEADLINES** is included in *ResearchBase*'s one-time, annual access fee of \$ 500.00.

All *ResearchBase* data -- abstracts and full text -- are available in ASCII format for quick and easy incorporation into existing information retrieval systems. Complete access information is listed on the next page.

Status: Online database fully active, available and in commercial use; new research abstracts and full text documents being added daily

P.O. BOX 187 ARLINGTON, VA 22210 PHONE: (703) 271-5988 FAX: (703) 271-5989

RESEARCHBASE ACCESS OPTIONS

DIRECT DIAL

- > ResearchBase Telephone Number: 703-271-0323 (via modem)
- > Modem Settings: Baud: Up To 14,400; Data Bits: 8;
Stop Bits: 1; Parity: N
- > Terminal Emulation: ANSI

INTERNET

- > Telnet to **FEDWORLD.GOV**
- > Logon to FedWorld (there is no charge for this service)
- > From the FedWorld Main Menu, type **UDD144**; You will now Gateway to ResearchBase
- > Logon to ResearchBase

**Friday Afternoon
SESSION 3**

Plaza A, Room #3

**IIDR - DISTRIBUTED
HETEROGENEOUS AND
LARGE DATABASE
SUPPORT**

Systems Research and Applications (SRA) Corporation

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Technology, Product or Service Keywords: Integrated and COTS text retrieval systems, English and multi-lingual data extraction (natural language processing), multi-lingual browsing, message processing, SGML markup, visualization, image, photo and map storage and retrieval, electronic publishing and on-line copyright enforcement, open source information handling.

Description: Systems Research and Applications (SRA) Corporation is a professional technical services company headquartered in Arlington, VA. Over the last decade, the Intelligent Information Systems Division (IISD) has had an active research and development program in the areas of natural language processing, and text and image storage and retrieval. In addition to a substantial Independent Research and Development investment, IISD has executed dozens of projects, primarily for Intelligence Community (IC) and CENDI customers. SRA is dedicated to offering quality technical services, and has special experience and expertise in open source information and on-line systems.

In our presentation, we will review the company and the major products and services we provide in manipulating electronic information. Some of the highlights to be covered include:

Automated Extraction: Just in its first public release, SRA offers a commercial extraction technology called NameTag. NameTag extracts names of people, organizations, dates, locations and numeric quantities without customization or specialized dictionaries. It automatically unifies variant methods of referring to entities (such as acronyms or other short forms), and has been customized to operate in a variety of foreign languages. NameTag outputs identified information into a form suitable for a database, as well as in a standard SGML markup. It can be integrated into systems through its flexible Applications Programmers Interface, and has been used to improve the performance of commercial text retrieval systems, on-line information systems, as well as to automate the creation of hypertext markup (HTML).

Multi-search Text Retrieval: Leveraging an operational system built for a major IC customer, SRA has developed a commercial spinoff called Intellisearch. Intellisearch integrates legacy COTS and custom text retrieval systems into a unified environment. Using a universal query language, users can enter a description of their information need. This description is translated into the native format of a variety of text retrieval engines, running on a variety of different HW/SW platforms. Text that match each query from each system are merged and a single display presented back to the user. Currently supported search engines include Topic, ConQuest, ExCalibur, BRS and OpenSystems SAFE.

Copyright Protection: SRA's proprietary Imprint technology enables distribution of imagery data across unsecure networks. The automatic watermarking process does not interfere with the display of the data, but prevents unauthorized use and cannot be reverse-engineered. The ImPrint process is applied to one or more planes of an image. If a potential consumer attempts to print a watermarked image, the color separation (i.e., color space conversion to CMYK) for printing makes the mark particularly evident, rendering an unauthorized image unusable on the printed page. A randomization procedure deters reverse engineering.

SRA is also constructing an on-line text database system for a government customer to track and assign royalties for copyright holders. This application enables customers to subscribe to an electronic news service. Customers can construct profiles of their interests with either natural language or boolean keywords, and receive the relevant articles via electronic mail.

Intelligence Analysts Associate: The IAA project, funded by Rome Laboratories for an IC customer, performs domain-independent extraction of information from text. The extracted information is stored in a database, which is then used to feed a variety of visualization utilities such as GTE's C2TAS timeline display, Alta Analytic's NetMap program, and the Oilstock mapping package. IAA enables extensive, innovative browsing capabilities to facilitate the identification of relevant items and texts by analysts.

Photofile: SRA developed a commercial on-line photo retrieval system for Picture Network International. With this technology as a base, SRA offers products and infrastructure to construct custom electronic archives of photos, maps or images. Relevant components include the scanning (or *ingest*) of the source material, and the storage and retrieval of the resulting archives. Natural language requests are translated into a conceptual form, and matched against captions, features, or other descriptors, either from the source or entered at time of ingest. Conceptual searching enables relevance ranking of results, and users can view matching items in a variety of sizes, as well as purchase, print, or download.

Machine Assisted Indexing: Under government sponsorship, SRA has built the MAI tool to assist indexers of the largest manually indexed text database of science and technical materials in the country (CIRC). An intuitive graphical user interface enables cut-and-paste of fills from text, as well as menu options for certain attributes. Approximately sixty fields are entered for each text, and MAI incorporates verification and validation of the entered fields, further increasing the accuracy of the indexing process.

In addition to MAI, SRA has produced tools to facilitate the markup of texts as to entities of interest. The Named Entity Tool is a Tk/Tcl-based interface that allows users to mouse over those portions of text they wish to annotate or extract, and pick the tag (SGML) that the text should be marked with. The tags are user-customizable through an Applications Programmers Interface, and are color-coded. The tagged text is output with embedded SGML markup for downstream applications. The tool currently is available in English, Spanish, Japanese, and Chinese, and was used to mark up the training and testing materials for the ARPA-Sponsored Message Understanding Conference.

Status:

IAA- Government-Funded Prototype

NameTag - Commercial Multilingual Data Extraction Product

Intellisearch - Commercial Heterogeneous Text Search System

ImPrint - Commercial Image Watermarking Technique

Photofile - Commercial Photo / Map / Image Storage and Retrieval System

MAI - Government Funded Prototype

Data Integration Inc.

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Technology, Product, or Service Keywords: integrating distributed databases, heterogeneous databases, middleware, data transformation, cross database joining, Unix

Description: Data Integration has developed an extended "middleware" solution for managing distributed databases. The network server software product, call "InterViso", allows customers to view and maintain any combination of distributed data sources as if they were one. These may include legacy databases and flat files, central and departmental relational databases, data warehouses, etc.

Middleware is broadly defined as the connectivity components that enable applications in one computer to access the resources of one or more other systems. There may be several layers in a middleware solution ranging from basic network exchange protocols to higher level application and data management services.

Customers choose middleware solutions to insulate application programmers from repeatedly needing to deal with cross-systems complexities. However, today's existing middleware layers only simplify the *access* to distributed resources. InterViso provides the services to transform data, to join across databases where the join fields may or may not have a common set of values, and to coordinate updates across databases. InterViso's extended services automate the data management functions needed to ensure informational consistency and completeness, thus eliminating what is currently a labor-intensive and error-prone process.

The InterViso system consists of three main components plus some utility programs.

1. IVBuild - maintains a central data dictionary (repository) that describes the existing databases and one or more standardized views across the databases.
2. ivadmin - maintains access control and configuration information.
3. IVQuery - provides access and update services to ad hoc users and application programs.

IVBuild: accepts descriptions of existing databases, files, and/or application programs and assists a DBA in developing one or more conceptual views of the shared data in the existing databases. This conceptual view, called a "federated view", masks the differences in schema and data across the databases. It provides local autonomy of the existing databases and provides access to only the parts of the databases that are to be shared. It standardizes how data may be seen such as providing all users with the same currency for money fields and with all dates in the same format.

Multiple federated databases may exist with different subject areas or for different user populations. It will never be possible to catalog all U.S. Government data. However, it is possible to build data dictionaries for specific subjects or for specific groups of users. The data dictionary can be expanded as new sources are discovered or developed.

Different federated databases may also exist to control access to the data sources. There is a fundamental conflict between open systems and free access to data and the desire of database owners to protect their data. InterViso protects and records data access. By requiring a user to go through IVQuery, access is limited to only the parts of the database that are shared and cataloged. The view will enforce restrictions on what can be seen and the format in which it will be seen. IVQuery will keep a log of the databases accessed by a user and, optionally, every query that was run.

ivadmin: records encrypted passwords for access to hosts, DBMSs, databases, and gateways. It is also used to assign users to servers for load balancing.

IVQuery: is a data integration server that can access, update, or warehouse data that is stored in different ways in multiple databases. IVQuery resides on a Unix server and can support users and application programs on Unix hosts, PCs with Windows, and X-terminals.

The user view is of a single database. All data location and resolution of structure, data, and language differences is done automatically based on the information stored in the DD/D. The user does not have to be concerned about the nature or location of the data in the underlying data systems. IVQuery takes care of remote login to potentially diverse operating systems, access control in the operating system and DBMS, access methods required at the underlying database level, query language used by the underlying DBMS, query optimization to select the fastest way to execute a query, translation of data used in a query from federated units to local units, translation of data returned from local units to federated units, and display of an integrated report.

The user view is relational and uses the SQL query language. However, InterViso provides some extensions to SQL to support non-relational data sources. SQL queries may contain embedded function calls which are executed by application programs. Program calls may retrieve BLOB data (large binary or text objects).

IVQuery may be used interactively or in batch mode to run standard queries that monitor for change, look for patterns in data, or download data of current interest. Data may be dynamically retrieved into a warehouse database which may be any relational DBMS. The user specifies what data is to be selected with a dynamic "SELECT INTO" query, and the resulting data is converted into the federated view and stored into a table at the designated site. The warehouse data may be used in conjunction with the underlying databases.

Hardware: InterViso runs on Sun under SunOS or Solaris or on IBM under AIX and stores the DD/D in Oracle, Sybase, DB2 or Ingres on the same or a different computer. The interactive user interfaces use X-windows. Application programs may be written to call IVQuery through a proprietary API on the Unix platform or through the Microsoft ODBC on the Unix platform or a PC. The existing databases may be stored on diverse types of computers and DBMSs. DII offers gateways to relational DBMSs on Unix platforms. Other DBMSs are accessed through commercial gateways such as Oracle SQL*Net, Sybase Open Server, Cross Access, or EDA/SQL.

Status: InterViso - Commercial Product since 1991



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Technology, Product or Service Keywords: data integration and presentation, integration of geographic information systems (GIS) technology, electronic document management, data and workflow management, massive digital storage, client/server compatibility, navigating and searching across distributed multiple heterogeneous databases, secure operating systems, federated database architecture, high-performance network management, image data compression.

Description: E-Systems, a \$2.2 billion company, is a developer of information systems and products in the areas of intelligence, reconnaissance and surveillance, and command and control. E-Systems remains committed to providing the U.S. intelligence community with world-class products and services covering the broad spectrum of technologies needed to address the open source intelligence requirements of the next century.

ECLIPS™: ECLIPS focuses systems technologies on making information easier to apply by streamlining the intelligence production cycle. ECLIPS automatically gathers data, then alerts users to information stored in the system, saving time and resources while improving accuracy. Humans can then concentrate on analysis and action. The net result - more of the right information to the right desktop, sooner. ECLIPS client systems include Windows 3.1 or Macintosh System 7, and server systems work on your UNIX platforms, including IBM, RISC and SUN. Network protocols are standard TCP/IP. ECLIPS can be integrated with any standard e-mail via SMTP.

Global Change Assisted Search for Knowledge (GC-ASK): This system links selected information systems of the U.S. Global Change research community to make data from diverse, heterogeneous systems available on the desktop via the Internet. E-Systems is the system integrator for GC-ASK, which is based on ConQuest™ Software, Inc.'s natural language search engine. Users can simultaneously query multiple data systems to view or retrieve the most relevant files. Beyond text search, GC-ASK fully integrates a Geographic Information System (GIS) component, enabling comprehensive search of georeferenced data, including imagery, through the same interface. A semantic network feature surpasses Boolean techniques to search for context, not simply word matches. GC-ASK is Z39.50 compliant, COTS- and standards-based, open and extensible, making it easily integrated into existing infrastructures and systems.

EMASS®: Enormous amounts of data will be collected from open sources, generating unprecedented data storage requirements. EMASS, an E-Systems wholly-owned subsidiary, meets that challenge with reliable, cost-effective, off-the-shelf mass data storage solutions. The EMASS Automated Media Library is a true second generation product, incorporating input from over 200 user sites. The open architecture of EMASS allows utilization and intermixing of media and transports manufactured by various vendors. Using D-2 small cartridges it can store up to 52.2 terabytes of data in a footprint of less than 54 square feet.

Image Compression: E-Systems has over 15 years of hands-on experience in bandwidth compression for images, developing algorithms, and building systems for current operational use. Experience includes developing bandwidth compression algorithms for EO, IR, and SAR. Our DCT (compression) algorithm uses a 32 by 32 pixel transform block size to compress 1024 by 1024 pixel image chunks. It uses adaptive Huffman coding and at the same time has adaptive rate

control, allowing output at fixed bit rates. Current research efforts include work on: 1) Color Map Compression, 2) Multisensor/Multispectral Compression, 3) Wavelet Transform Compression (part of joint research with Texas A&M University), and 4) Lapped Orthogonal Transform (LOT).

System Server™: This open architecture system provides generic data distribution, management, and service functions in a distributed computing environment. It provides an Application Program Interface (API) tailorable to multiple programs. SystemServer was developed in C and C++ under UNIX and is compliant with the POSIX standard to simplify the task of supporting multiple host platforms. The system includes a high-performance device interface to a mass storage system, and performs data dissemination and data display functions. SystemServer uses a COTS relational database software and TCP/IP. SystemServer supports a distributed computing environment of heterogeneous computers ranging in size from workstations to massively parallel compute servers. The SystemServer API provides a uniform programmatic interface across dissimilar computers.

Query Management System (QMS): QMS provides a common database query capability for accessing a broad spectrum of data, including relational databases and/or flat files. QMS allows users to query for data stored in the system based on the type of data, relationships to other data, subject categories, etc. Catalogued data can be retrieved according to metadata attributes. Descriptive information is retained when the data is retrieved, so it is handled in its native environment. All of the attributes and data types are stored in the database, so additions or modifications to these values are user transparent. This system is driven by a Motif Graphical User Interface (GUI), making queries to the user's data holdings greatly simplified. The QMS operates with multiple relational database management systems (RDBMS) and runs on multiple platforms. In addition to the GUI interface, QMS can be accessed through an API.

Integrated Database Management System (IDBMS): IDBMS incorporates QMS, providing a foundation for transition to an integrated and automated spatial data production system. IDBMS is the Central Server for this system and an integrated Distribution Information System, a Prediction System, and a Distributed Processing Systems Preplacement into a single functional system via a network. This system provides the physical and logical foundation to host a georeferenced global database with easy access by any user to a related data network. IDBMS is a combination of custom and COTS products, including secure operating systems, federated database architecture, high-performance servers and network management, and high density on-line storage.

Status:	ECLIPS™:	Commercial Product
	GC-ASK:	Government-Funded Prototype
	EMASS®:	Commercial Product
	System Server™:	Commercial Product
	Compression Technology:	Government-Funded Research
	QMS:	Commercial Prototype
	IDBMS:	Government-Funded System

All product names are trademarks of their respective companies.

IBM Government Systems Houston will discuss the concepts and architectures of the following information technologies:

- **Digital Libraries (DL)**
- **Data Warehouse and Mining**
- **Parallel Databases**

IBM DIGITAL LIBRARY (DL): The IBM DL provides an integration of hardware and software products that are already or soon-to-be products (i.e. within the next year). The five functions that form the foundation of the IBM DL are: Storage and management, Search and access, Rights management, Content creation and capture, and Distribution. The data and storage management uses a client/server model, with library servers to manage index and search support data, and object servers to manage the digitized objects (i.e. the collection). The collection can be text, graphics, images, audio and full-motion video. The DL architecture allows for distributed operation of a DL over heterogeneous operational environments. Two examples are: 1. Regional libraries operating Lotus Notes, supplied from a main library server complex; and 2. Internet WWW servers being used to distribute main library information. File-based software (IBM LAN Server/2, Ultimedia and LFS/ESA) and dedicated hardware (IBM MediaStreamer) provide some potential solutions for real-time delivery of stream data, such as digitized audio or video. The VisualInfo product is a cornerstone for the Digital Library, providing tools to capture, store and manage digitized objects in a content-independent manner. The IBM DL uses Adstar Distributed Storage Manager (ADSM) and Object Access Method (OAM) products for hierarchical storage management. Search technologies being incorporated into the IBM DL offering include Search Manager, Ultimedia Manager (i.e. Query by Image Content -- QBIC) and search technologies from Excalibur Corporation. The open system architecture, however, allows for integration of additional tools and technologies. A free-text query facility is included that returns a relevance ranking of documents. Proper names are recognized and treated as terms. Lexical nets display relationships among terms, allowing further refinement of queries. Searches of images, digitized video and audio information can be done using the technology in the Ultimedia Manager product offering. Rights management techniques for the IBM DL are marking, encryption, metering, and billing. IBM has developed a visible "watermark" technique for marking digital images. For encryption, IBM has developed encryption and key management techniques to lock objects. With billing and metering techniques, a secure client is being developed with digitized information tagged with SGML codes for billing, access rights, etc. Prototyping is currently underway for encoded usage agreements, managed access to materials, appended copyright notices and embedded registered watermarks, recorded usage data, and usage reports. In support of data ingestion (scanning), a proprietary chip, Time Delay and Integration (TDI) Charge-Coupled Device (CCD) in an IBM digital camera converts light into digital values with very low noise, for images of over 3000 by 4000 pixels and over 4000 shades per primary. Advanced networking capabilities, such as ATM switches and network management software have been developed by IBM to assist in digital and analog information delivery.

DATA WAREHOUSE: IBM will discuss the current data warehouse model and the products and technologies which are critical to its success. The current model involves the continuous ingestion of operational data from legacy systems (data sources) and an automated process of transformation, integration, refinement and reorganization of the operational data (or its subsets)

into subject-oriented, time-variant views for use in strategic decision making and support. Scalable computing technologies, such as parallel servers, parallel databases and hierarchical storage managers are critical to the support of this new scalable data warehouse model. Over time the data warehouse system will experience growth in the data store (time-stamped operational views), metadata products (reports, aggregations) and complexity in ad hoc queries. The system architecture must be designed to support this growth in processing and storage capacities. IBM is offering products to support this emerging data warehouse environment including its Unix-based scalable parallel server (**IBM RS/6000 Scalable PowerParallel (SP2)**) supporting a variety of parallel database families, such as parallel **Oracle**, **Sybase**, **Informix** and **DB/2**, as well as various support tools for data ingestion, translation, and distribution, such as **Data Hub**, **Data Joiner** and **Data Propagator**.

DATA MINING: The three major components of data mining are: 1. Methods to identify, locate, and extract relevant data; 2. Tools to identify patterns and relationships in the data, including relationships and patterns from combinations of data; and 3. Effective presentation of relevant relationships mined from the data. IBM will offer a variety of tools and services for Data Mining; some of these are described as follows. *Neural segmentation* uses a neural network engine to segment the data. Within segments, the members of the segment can be further analyzed. Linkages between members of a segment and products associated with their behavior can be examined. Using a binary clustering technique called *Relational Analysis*, a set of groups that have the maximum similarity within them and the maximum difference between them can be created. This method has been applied to text processing to extract the concepts of the documents. The neural network approach relies on the data to show the user the best fit, rather than fitting the data to the user's best guess. Associations between elements are formed using the association list algorithm developed in IBM Research. Data mining results are presented to the user using tools that allow the data to be seen without overwhelming the analyst. Tools such as **Parallel Visual Explorer**, **Rule Visualizer**, and **Diamond** allow for graphic data visualization, with attributes such as color showing subsets or clusters, lines showing relationships, and color intensity or line thickness indicating confidence.

PARALLEL DATABASE: IBM's HPC/SI group in Houston has a Parallel Database team which specializes in large-database integration activities, from architectural planning to implementation. Parallel Database technology enables data mining applications by providing the capability to run complex queries against large databases in a significantly faster elapsed time. Many applications are currently supported, including risk and fraud analysis. The team has worked with SMP and MPP platforms that range from 4 to 128 node SP systems with prototypes of between 3 and 320GB of user data. The largest parallel database system the team is working with today is 1.2TB, growing to 5 TB. Query performance improvements using **DB2/6000 Parallel Edition (PE)** have produced orders of magnitude better query elapsed times (e.g. 50+ hours reduced to 18 minutes).

WORLD-WIDE WEB (WWW) INTEGRATED OFFERINGS: IBM offers a World Wide Web Starter Kit, which includes all of the hardware, software, and professional services needed for a client to have a multimedia presence on the Internet, including selective access to legacy databases with the appropriate security and firewalls. Demos are available and more information can be found on the IBM Government Systems home page, WWW URL: <http://www.clearlake.ibm.com>.

**Friday Afternoon
SESSION 4**

Terrace Room #1

**INFORMATION INDEXING,
DISCOVERY
AND RETRIEVAL
(CONCLUDED)**

InTEXT Systems

Point of Contact: Ed Schriger, Telesales Manager

Address: 120 Montgomery St. Ste. 450, San Francisco, CA 94104

Phone: (415)391-5290

FAX: (415)391-4996

Technology, Product, or Service Keywords: full text search and retrieval, real time content analysis, document summarization and routing, Internet server applications, Internet development toolkits

Description: *InTEXT* Systems currently markets a suite of advanced text processing tools and text retrieval servers for enterprise-wide and Internet deployment. The *InTEXT* text analysis tools use a set of heuristic algorithms to analyze text to determine its content. The analysis is accomplished in real time without the aid of an index or dictionary-type file. The technology is packaged in unique toolkits for generating document summaries and summary information about original text, and for routing (delivering) it based on user-specified content interest. *InTEXT* provides the toolkits as development libraries to implement these capabilities on multiple platforms. The *InTEXT* Intelligent Content Agent (Object Router) and full-text retrieval engine are also packaged in out-of-the-box configurations for Internet servers.

In our presentation *InTEXT* will present corporate background information and describe the role of heuristics in Internet applications with specific emphasis on the Intelligent Content Agent (Object Router). In our exhibit, *InTEXT* will demonstrate the Intelligent Content Agent and the Object Analyzer (summarization) technology.

Status:	Object Router -	Commercial Product
	Object Analyzer -	Commercial Product
	STATUS full text retrieval -	Commercial Product
	Intelligent Content Agent -	Commercial Prototype

Point of Contact: W. Mike Tyler

Address: Tippecanoe Systems, Inc.
5674 Stoneridge Drive. Ste. 119
Pleasanton, CA 94588

Phone: (510) 416-8510

FAX: (510) 416-8516

Technology, Product, or Service Keywords: free text search and retrieval, text indexing, relevance ranking, Windows / NT, Internet connectivity

Description: Automatic indexing of large collections of documents. Tecumseh was designed to handle document sets up to 1 million pages.

Automatic correlation of statistically linked words and phrases. Tecumseh computes correlation values for each pair of interesting document words (and phrases) which can be used in queries to increase retrieval accuracy.

Retrieval of information is a combination of full-text free-form plain English queries and Boolean expressions. Tecumseh searches an inverted index of words and phrases appearing in the collection of documents which results in sub-second search times.

Tecumseh is client /server technology. Tecumseh's server runs under Windows/NT. The server can support multiple database indices and up to 63 simultaneous user connections using TCP/IP communications and multi-threading. Tecumseh's client is a C++ API Class library which can support a wide variety of client platforms including Intel based machines (386, 486, pentium) and RISC-based workstations.

Status: Tecunseh Document Indexing & Retrieval – Scheduled for announcement, June, 1995

**Friday Afternoon
SESSION 5**

Terrace Room #2

COMMUNICATIONS:

SPEED, BANDWIDTH

AND WIRELESS

Architecture Technology Corporation

Point of Contact: Dr. Ranga S. Ramanujan

Address: 11800 Singletree Lane, Suite 300, Eden Prairie, MN 55344

Phone: (612) 935-2035

Fax: (612) 829-5871

Technology, Product, or Service Keywords: ATM, digital video, wide-area networks (WANs), computer networks, media transport service, multimedia

Description: Emerging high speed networking technologies such as Asynchronous Transfer Mode (ATM) have the potential to dramatically increase the sophistication and capability of information retrieval applications in many fields such as education, defense, government information dissemination, health care, commerce and entertainment. Some of the advanced information retrieval applications that could find widespread use in the near future include video on demand, interactive home shopping, and digital libraries. Essential to the functioning of these next-generation information retrieval applications on such high-speed bitways is the end-to-end media transport service. This service may be viewed as a layer of functionality that resides between the application layer and the network layer at the two end points of the communication, i.e., the information server and the information consumer.

This presentation will discuss the preliminary results of the research performed by Architecture Technology Corporation on new architectures for media transport services for information retrieval applications. It will describe an end-to-end transport protocol called the *video retrieval protocol (VRP)* for transporting compressed, stored video over a wide-area ATM network to a remotely connected equipment for real-time playback of the transported video stream. VRP is designed to operate over the ABR and VBR+ services of ATM and is targeted for use by next-generation video retrieval applications.

The commercial application of this technology is a software product for real-time (or over-the-wire) retrieval and playback of compressed video over an ATM network that would enable the implementation of applications such as network-accessible virtual reality environments.

Status: Government-Funded Research

Madge Networks, Inc.

Point of Contact: Steve Naylor

Address: 7926 Jones Branch Drive, Suite 525, McLean, Virginia 22102

Phone: 703-761-1245

Fax: 703-761-0676

Technology, Product or Service Keywords: Token-ring, Ethernet, FDDI, ATM

Description:

Presentation

Over the past few years the traditional local area networking standards of Ethernet and Token-ring have been augmented by new standards: FDDI, ATM, switched Ethernet and Token-ring in attempt to meet the challenges of the need for increased bandwidth and new applications on local area networks. The leap to ATM or switching incurs a change in the underlying idea: from broadcast to switched network.

We will look at the factors that have influenced the need for new networking technologies and how they meet to those challenges. As Desktop Multimedia becomes important, how do FDDI, Ethernet, Token-ring, ATM and switched networks meet the needs of these new technologies, and how do new applications impact existing local area networks.

Exhibit

Madge Networks, Inc. will be showing the latest in high performance Token-ring and FDDI network interface cards. A variety of different PC bus types are supported which include ISA, EISA, Micro Channel, PCI, and PCMCIA. Madge Smart and FastMac Plus software drivers provide high throughput and maximum memory savings.

Also on display will be the Madge Stackable hub solutions for Fiber, Shielded and Unshielded Twisted Pair, environments. This features the Smart CAU Plus, Smart LAM and Smart RAM (Ring Access Module). New cost effective server based Hub cards which provide node fault isolation and remote management will also be presented.

Madge personnel will be available to discuss Token-ring and ATM switching concepts and products.

Status: Commercial Product

INTERSTATE ELECTRONICS CORPORATION

Point of Contact: John C. Chipman

Address: 1735 Jeff Davis Highway, Suite 905, Arlington, VA 22202

Phone: (703) 413-0400

Fax: (703) 413-0438

Technology, Product, or Service Keywords: Bandwidth-on-Demand, DAMA, SCPC, metered connections, automatic or manual capacity assignment.

Description: Interstate Electronics Corporation (IEC) in partnership with COMSAT Laboratories has developed the IEC-1000 Interstate Highway™ DAMA Overlay Network System. The product is a self-contained signaling modem, burst processor, and Network Management System (NMS) interface that provides mesh on-demand connectivity for variable frequency assignment SCPC modems. The Highway™ is ideal for service providers and private networks that require variable demand-assigned multiple-access links in point-to-point and point-to-multipoint topologies among geographically dispersed sites. The large number of end user applications, which the InterstateHighway™ supports, include: INTERNET Connectivity, Video Teleconferencing, Disaster Recovery, LAN Connectivity, Remote PBX Connectivity, Telemedicine, High Speed Image Transfer, Remote Printing, Remote Newsgathering, and NX64 kbps carrier services.

The IEC presentation will describe the product and it's many advantages. Our exhibit will contain the hardware and we will demonstrate how it is used.

Status: IEC-1000 Highway™ System--Commercial Product

IBM Communications Technologies (ATM, High Bandwidth, Wireless)

IBM Research (Yorktown, NY) will discuss communications products and near-term technologies in the following areas:

1. Switching fabrics for high bandwidth/low latency interconnects for scalable computing;
2. ATM for open network communications both wide-area and local-area networks and workstation support/connectivity;
3. High bandwidth optical and parallel fiber technologies;
4. Wireless communications, both infrared and RF technologies and products.

IBM will demonstrate in the demonstration-booth area the latest wireless communications products for its laptop PC systems.

IBM Contacts:

Tony Elam, IBM Government Systems, Houston, (713) 282-8776

Digital Library, Data Warehouse, and Parallel Databases Architectures

Geneva Henry, IBM Government Systems, Houston, (713) 282-8308

Digital Library, Data Mining, Search Technologies

Dave Sebring, IBM Government Systems, Bethesda, (301) 564-1419

Architecture and Requirements - Government Systems

Mary Henry, IBM Government Systems, Bethesda, (301) 564-2549

Digital Library Opportunities

Hamid Ahmadi, IBM Research, Yorktown, (914) 784-7219

Communications Technologies

Alex Zekulin, IBM Science and Technical Systems, Dallas, (214) 280-1419

Data Mining Tools and Technologies

Larry Bowden, IBM Multimedia Systems, New York, (914) 766-1504

Director - Multimedia Solutions Marketing

Evangelos Simoudis, IBM Science and Technical Systems, Almaden, (408) 927-2215

Director - Data Mining Strategy

EXHIBITOR-ONLY

ABSTRACTS

Abstract: AT&T SecretAgent Version 3.0, AT&T DSA Signature Software and AT&T Cryptographic Development Kits

AT&T SecretAgent 3.0 is a hybrid public-key encryption utility. It combines a software implementation of the Data Encryption Standard (DES) with public key technology. AT&T SecretAgent employs DES and triple-DES for bulk encryption (AT&T SecretAgent's DES module was recently certified by NIST for FIPS 46-2 compliance), Diffie-Hellman and RSA technology for key management, the Secure Hash Algorithm for message authentication and both the NIST Digital Signature Algorithm (DSA) and RSA for digital signatures. The program allows a user to encrypt and digitally sign a sensitive file before it is sent to an intended recipient. The intended recipient can use AT&T SecretAgent to decrypt the file and verify the authenticity of the sender and the file content. Many government organizations are particularly interested in AT&T SecretAgent because the National Institute of Standards and Technology (NIST) recently adopted the Digital Signature and Secure Hash Algorithms (DSA/SHA) as mandatory government standards for sender and message authentication. SecretAgent offers the first commercial implementation of the DSA/SHA.

Until recently, AT&T SecretAgent was not exportable because of the use of the Data Encryption Standard (DES) for bulk encryption. We have solved this problem by introducing an exportable version of AT&T SecretAgent which employs a National Security Agency (NSA)-approved proprietary, exportable encryption algorithm in place of DES. The exportable version of AT&T SecretAgent still provides the public key cryptography for key exchange and sender and message authentication and is fully compatible with the full strength domestic version.

In addition to the encryption, key management, and digital signature features, AT&T SecretAgent provides extensive self-diagnostics for resistance to viruses and tampering, command line and menu-driven interfaces and context-sensitive on-line help features. ASCII conversion, data compression and file erasure utilities are also included in the program. AT&T SecretAgent also offers cross-platform interoperability between DOS, Windows, UNIX and Macintosh versions of the program.

All versions of AT&T SecretAgent 3.0 will work with any electronic mail system. The Windows version of the product is also mail-enabled. This means that it can be integrated with popular mail packages such as Lotus cc: Mail and Microsoft Mail. The integration is provided through AT&T SecretAgent's support of the Vendor Independent Messaging (VIM) 2.0 API Standard, as well as the Microsoft Messaging Application Program Interface (MAPI) and AT&T EasyLink Access Plus. The Windows version of AT&T SecretAgent 3.0 will also interface directly with the NSA Fortezza crypto card. When the Fortezza option is chosen in the "Preferences" dialog box, AT&T SecretAgent will access the crypto functions in the Fortezza Capstone chip rather than AT&T

SecretAgent's software implementations of the above-mentioned crypto algorithms. AT&T SecretAgent 3.0 has also been enabled with support for a variety of other security devices and tokens including: Fischer International's Watchdog with Armor, Cordant's Assure board, the NIST smartcard, and National Semiconductor's iPower PCMCIA card.

AT&T SecretAgent is currently available for MS-DOS, Windows 3.1, Apple Macintosh System 7, UNIX System V/386 (SCO, AT&T, and Interactive), and Sun OS 4.1.x or Solaris 1.0. Ports to other platforms are under development.

The **AT&T DSA Signature Software** was designed for users who desire authentication capabilities but are not concerned about protecting the privacy of electronic information. The AT&T DSA Signature Software is fully compliant with the NIST Digital Signature (FIPS PUB 186) and Secure Hash (FIPS PUB 180) Standards. It is a signature-only utility that allows a user to generate and authenticate digital signatures on any file without encryption. Its use provides irrefutable assurance that documents exchanged with another correspondent have not been modified and that they have indeed come from the purported sender. The AT&T DSA Signature Software supports a modulus from 512 to 1024 bits. AT&T has obtained a Commodities Jurisdiction (CJ) from the U.S. Department of Commerce. The CJ allows the AT&T DSA Signature Software to be easily exported. The AT&T DSA Signature Software is currently available for MS-DOS, Sun OS 4.1.x or Solaris 1.0, HP-UX, DEC ULTRIX, DEC Alpha, and UNIX System V/386 (SCO, AT&T, and Interactive). Additional platforms are under development, including an Apple Macintosh System 7 version and a Windows 3.1 version with a drag-and-drop feature. In addition, a version of the DSA Signature Software that interfaces with the NIST/Datakey smartcard is available as a product called SignASURE.

AT&T licenses **AT&T Cryptographic Development Kits (CDKs)** containing implementations of the NIST DSA and SHA as well as DES, triple-DES, Diffie-Hellman, RSA, ElGamal, and a proprietary, exportable encryption algorithm. The Cryptographic Development Kits are available in the form of linkable object module libraries as well as Windows Dynamic Link Libraries (DLLs). The CDKs allow the AT&T public key and conventional cryptographic technology to be easily embedded in any custom application. The linkable code is available for a wide range of platforms/operating systems and with C, C++ or Pascal interfaces. The linkable object module libraries are currently available for MS-DOS, Apple Macintosh System 7, Sun OS 4.1.x or Solaris 1.0, UNIX System V/386 (SCO, AT&T, and Interactive), and HP-UX. As described above, the linkable code is also available in the form of Windows DLLs.

Exhibit Subject Matter

- *Protection for the transfer of sensitive information via the Internet (e.g., credit card, limited proprietary data)*
- *Encryption on the Internet*
- *Sender and message authentication (digital signatures)*
- *Multi-level security with tokens (i.e., Fortezza)*
- *Cryptographic Development Kits for development of applications that employ cryptography*
- *Exportable encryption and authentication technology and products*

Aviation Week Group

Point of Contact: Paul Sibbald

Address: 1200 G St NW, Suite 200, Washington DC 20005

Phone: 202 383 2399

Fax: 202 383 2442

Technology, Product or Service Keywords: Hard copy and electronic professional data.

Description: Aviation Week Group is the most powerful global print and electronic information network designed to serve the worldwide aviation/aerospace markets. Publications include Aerospace Daily, Aviation Daily, Aviation Week & Space Technology, Aerospace Propulsion, ATC Market Report, China Aeromarkets and Aviation Latin America. Electronic service includes Internet and Online access with multi-year historical files. (E-Mail: sibbaldp@mgh.com)

Status: Commercial Product

CALCOMP, Inc.

Point of Contact: Daniel Cavallaro

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Phone: 804-460-0085

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Technology, Product, or Service Keywords: Large and small format printing, large format plotting, large format scanning, scan to print solutions.

Description: CalComp is a manufacturer and supplier of plotting, printing, scanning and digitizing products for use in CAD/CAM, document management, printing, mapping and graphics arts applications.

At the CalComp booth, both raster and vector input and output solutions for a wide range of computer graphics applications will be demonstrated. A high speed, high resolution greyscale scanner and plotter as well as CalComp's new high resolution color ink jet plotter and pressure sensitive drawing tablet will be exhibited.

Status:

CalComp ScanPlus Scanner	- Commercial Product
CalComp DrawingSlate	- Commercial Product
CalComp Drawingmaster Plotter	- Commercial Product
CalComp TechJet Color Plotter	- Commercial Product

DataTimes

Point of Contact: Chad Vesper

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Phone: (800)642-2525

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More than 5,000 sources make DataTimes EyeQ the world's most comprehensive database for research. With more regional, national and international newspapers, magazines, trade publications and newsletters. Full transcripts from top TV news programs and leading global newswire services.

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DRI/McGraw-Hill

Point of Contact: Tom Zoretich

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Suite 1000
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Washington, DC 20005

Phone: 202-383-2050

Fax: 202-383-3531

Technology, Product, or Service Keywords:

Economic, Trade and Financial Data Bases and Analytic Software Covering Developed and Emerging Economies

Description

DRI provides data, technical support, forecasts, advanced analytical techniques, and expert consulting to help clients evaluate their own economic situation and future prospects. The DRI staff reflects a diversity of emphasis not duplicated elsewhere: specialists in domestic and international economics, data banking, computer systems and software, demographics, and industrial, financial, energy, regional, and regulatory economics. These disciplines are combined to form an effective team of experts necessary for an integrated study effort. This capacity is an important prerequisite for success, especially when research questions traverse sectoral lines, span the realms of micro- and macroeconomics, and require the application of several disciplines and methods of analysis.

DRIBase is a sophisticated database manager that is capable of storing hundreds of thousand of time-series and making them instantly accessible on a PC or throughout a Local Area Network (LAN). **DRIBase** serves as a central time-series and data storage facility that allows user to easily retrieve data and have fully integrated table and graph capabilities. Because of its sophisticated databanking structure **DRIBase** can handle many different sources of data, easily consolidating many different and disparate datasets throughout the workplace into one fully integrated system.

DRIBase is a powerful analytical package as well, able to perform most scalar and vector operations needed to work with time-series data. It is quickly able to compute spreads and ratios, and work with lagged variables. **DRIBase** accommodates all frequencies that economic and financial data are normally reported in and provides tools to instantly convert data into any required frequency. **DRIBase** also links to statistical software packages, such as DRI's EPS 386 or other commercially available packages, to accommodate more rigorous statistical analysis such as regression analysis or model building.

The central databases of DRIBase are dynamically linked to its worksheets and graphs. Whenever a table or graph is opened, it is automatically updated, and therefore contains the most recent data available. This eliminates any errors or delays caused by manually updating frequently used tables, graphs, or reports. Users are also able to select a set interval or a moving time window of data which can be used to monitor the latest set of economic or financial indicators.

INTERLEAF CORPORATION

Point of Contact: Ed Stephan
Address: 7833 Walker Drive, Suite 460
Greenbelt, MD 20770
Phone: 301-982-0991 **Fax:** 301-982-2916

Technology, Product, or Service Keywords: Integrated software products for desktop publishing and assembly, document management, electronic distribution and Internet publishing.

Description: Interleaf, Inc. is the worldwide leader in the document creation, management and distribution with it's software products Interleaf 6 (I-6), Relational Document Manager (RDM), and WorldView. Interleaf also provides automatic HTML tagging with Cyberleaf for publishing on the World Wide Web.

Status:	INTERLEAF 6 FOR MOTIF -	Commercial Product
	RELATIONAL DOCUMENT MANAGER -	Commercial Product
	WORLD VIEW -	Commercial Product
	CYBERLEAF -	Commercial Product
	I6 WINDOWS NT -	Commercial Prototype

Lightburn & Associates Incorporated

Point of Contact: Christopher S. Irwin

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Phone: (410) 757-7323

Fax: (410) 757-4482

Technology, Product, or Service Keywords: full-text search and retrieval, DBMS, real-time profiling, message management, distributed, scalable, platform independence

Description: Lightburn & Associates' Enterprise Information Server (EIS) system, currently implemented under the Netscape interface, consists of the TEXIS database system which utilizes the Metamorph pattern matching full-text retrieval engines to provide concept querying of text fields in the database. TEXIS is a COTS product which supports a distributed environment. It currently runs on all UNIX flavors, OS/2, Windows, and Windows/NT. The EIS also performs real-time profiling of message content, the results of which are loaded into a database table for retrospective retrieval. The EIS can also be accessed through an HTTP server. We have implemented the EIS system using the HTTP server. The EIS performs real-time profiling of wire traffic. We will demo the Real-time profiling by simulating a Clarinet news feed. Further, the EIS has zero-latency insert into the database because of the ability to search unindexed text. When a record is added or updated in the database, it is available for search and retrieval immediately. Since the user interface is Netscape, user queries and profiles can be submitted to the EIS server from any client platform. This supports ease of scalability and platform independence.

TEXIS supports SGML, Multimedia and objects and ODBC (Open Database Connectivity) drivers for Windows applications. It supports large text fields (up to 1 Gigabyte) as well as external objects (also up to 1 Gigabyte)

The databases which we will use in our demonstration consist of the Monterey Institute's Proliferation Databases, Clarinet News, and Unclassified DOD Messages.

Status:	TEXIS Relational Database Server -	Commercial Product
	TEXIS HTTPD Bridge -	Commercial Product
	Metamorph Search Engine -	Commercial Product

NSTL (National Software Testing Laboratories)

Point of Contact: Edward McLaughlin - Manager, Government Testing Division

Address: 625 Ridge Pike, Building D, Conshohocken, PA 19428

Phone: (610) 941-9600

Fax: (610) 941-9952

E-Mail: edm@nstl.com

Technology, Product or Service Keywords: Acquisition Support Services, Hardware Testing, Software Testing, Testing Services, Consulting, Live Test Demonstrations

Description: NSTL (National Software Testing Laboratories), a division of The McGraw-Hill Companies, provides microcomputer testing services to government entities and hardware/software vendors worldwide.

NSTL's acquisition support services can facilitate the procurement process at every step. We can write RFPs, develop and conduct live test demonstrations, evaluate and test hardware and software products and produce detailed results reports. These services are designed to stay ahead of quickly moving technology, recognize misleading vendor claims and discover questionable product quality and compatibility problems before you make the purchase.

NSTL helps government personnel get the best product values, filter out low quality products, shorten the procurement cycle, minimize serious vendor protests and save millions of dollars in direct and indirect costs.

NSTL also conducts testing for hardware and software manufacturers, corporations and business and PC-related publications around the world.

Status: Commercial Services

The Faxon Company, Inc.

Point of Contact: Mr. Bill May, Regional Sales Manager

Address: 485 Spring Park Place, Suite 550, Herndon, VA 22070

Telephone: 703-471-5880

Fax: 703-481-0806

Technology, Product, or Service Keywords: Journal Subscriptions, Information Acquisition, Document Delivery, Current Awareness Service

Description:

Faxon is an international subscription agency offering several information related services including subscriptions to journals in any subject category, CD-ROM publications, and information in other formats.

We also offer Faxon Finder, a current awareness service which includes article citations and tables of contents for over 12,000 journals from 1990 to present. Copies of articles may be ordered on-line. Finder is available on-line via the Internet or on CD-ROM.

Status: Commercial Service

TRW

Point of Contact: Bill Noah

Address: TRW/DTD
One Space Park Drive
R2/2186
Redondo Beach, CA 90278

Phone: (310) 813-2553

Fax: (310) 812-2045

Technology, Product, or Service Keywords:
Document processing, organization, and management

Description:

The TRW InfoWeb Architecture™ rapidly delivers key information to decision makers. It tackles the problem of assimilating multi-media documents from many sources with tools to:

Collect and normalize information to create a single integrated repository. Documents can contain multiple types of data. InfoWeb handles text, images, graphics, and video data in the way most appropriate for each--compression, storage, and retrieval techniques can be specialized.

Filter, enrich, and organize information. The documents are prepared to help users browse, summarize, and understand the content.

Browse and retrieve information. InfoWeb provides five sets of data discovery tools to find the answers you need:

- Profiled Delivery
- Local Query
- Global Query
- Local Browse
- Global Browse

Transform information for your applications. InfoWeb will transform the set of documents selected by a browser for use in an external application. It also allows applications to query its database directly and select documents to be exported.

Status:

Operational at two pilot sites; components operational at multiple government sites.

**EXHIBITOR
INFORMATION**

Exhibitor Booth Layout

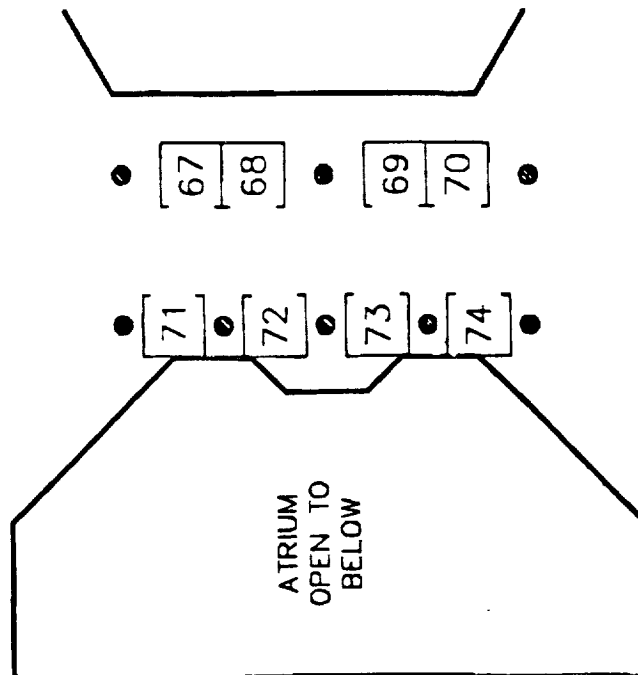
Exhibitor List - Alphabetical

Exhibitor List - By Booth Number

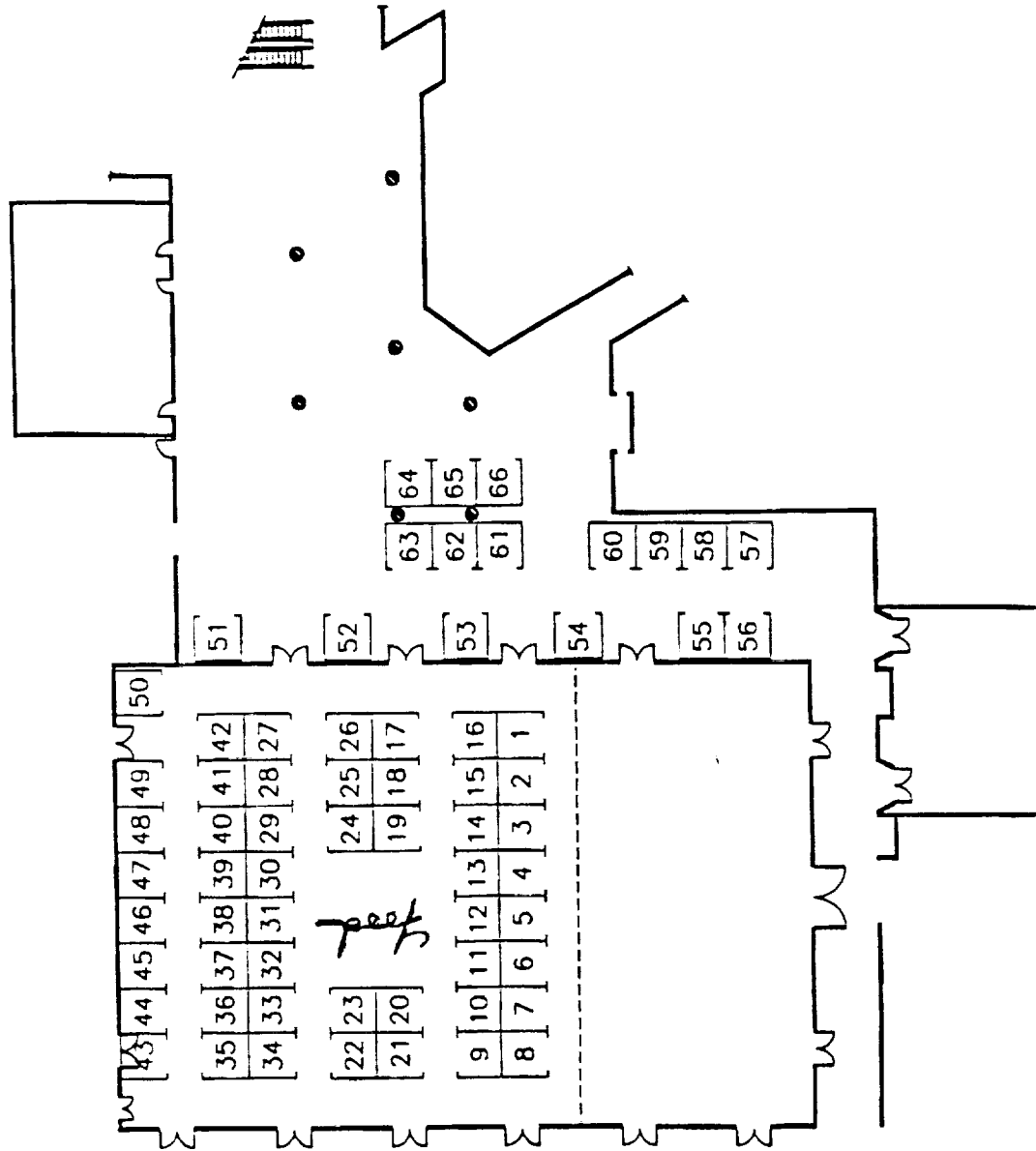
COSPO/CENDI
INDUSTRY DAY CONFERENCE
15-16 June 1995

EXHIBIT BOOTH LAYOUT

UPPER LEVEL



LOWER LEVEL



EXHIBITOR LIST (Alphabetical)

COMPANY	Booth Number
Access Innovations, Inc.	4
Architext Software, Inc.	10
AT&T #1	7
AT&T #2	8
AUSPEX Systems, Inc.	74
Aviation Week Group	70
Battelle	11
BBN Systems and Technologies	17
CALCOMP, Inc.	68
Cambridge Parallel Processing	28
CIESIN	41
Claritech Corporation	1
Collins Computer Consulting, Inc.	64
ConQuest Software, Inc.	50
Data Integration, Inc.	16
DATAPRO	59
DataTimes	33
Desktop Data, Inc.	9
Documentum	40
DRI	60
Dun & Bradstreet Information Services	52
E-Systems	30
East View Publications, Inc.	38
Excalibur Technologies	21
FJV Company, Inc.	37
Gemini Computers, Inc.	2
HNC Software, Inc.	53
Hughes Information Technology Corporation	39
IBM - Government Systems	43
IBM - Research	44
Individual, Inc.	65
Information Access Systems, Inc.	3
Information Dimensions, Inc.	36
Interleaf, Inc.	22
Interstate Electronics Corporation	49
InTEXT Systems	48
Isolation Systems, Ltd.	46
Jane's Information Group	31
Knight Ridder Information, Inc.	26

EXHIBITOR LIST (Alphabetical)

Language Engineering Corporation	13
LEXIS-NEXIS	15
Library of Congress	66
Lightburn & Associates, Inc.	67
Logicon, Inc.	18
Madge Networks	14
Memex	47
Microsoft	69
National Software Testing Laboratories	57
Open Text Corporation	32
Open Vision Technologies, Inc.	29
Oracle Corporation	45
Oxford Analytica, Inc.	25
Paracel	6
Paralon Technologies, Inc.	23
PC Guardian	27
Professional Book Group	58
Raptor Systems, Inc.	20
SandPoint Hoover	34
Secure Computing Corporation	5
SecureWare, Inc.	55
SRA Corporation	42
SRI International	54
TextWise Company	51
The Faxon Company, Inc.	63
Tippecanoe Systems, Inc.	62
TRW	61
Verity, Inc.	56
WANG	71
Worldwide Government Directories, Inc.	72
Xyvision, Inc.	73

EXHIBITOR LIST (By Booth Number)

Booth No.	COMPANY
	Located In Ballroom (Booths 1 - 50)
1	Claritech Corporation
2	Gemini Computers, Inc.
3	Information Access Systems, Inc.
4	Access Innovations, Inc.
5	Secure Computing Corporation
6	Paracel
7	AT&T #1
8	AT&T #2
9	Desktop Data, Inc.
10	Architext Software, Inc.
11	Battelle
12	OPEN
13	Language Engineering Corporation
14	Madge Networks
15	LEXIS-NEXIS
16	Data Integration, Inc.
17	BBN Systems and Technologies
18	Logicon, Inc.
19	OPEN
20	Raptor Systems, Inc.
21	Excalibur Technologies
22	Interleaf, Inc.
23	Paralon Technologies, Inc.
24	OPEN
25	Oxford Analytica, Inc.
26	Knight Ridder Information, Inc.
27	PC Guardian
28	Cambridge Parallel Processing
29	Open Vision Technologies, Inc.
30	E-Systems
31	Jane's Information Group
32	Open Text Corporation
33	DataTimes
34	SandPoint Hoover
35	OPEN
36	Information Dimensions, Inc.
37	FJV Company, Inc.

EXHIBITOR LIST
(By Booth Number)

38	East View Publications, Inc.
39	Hughes Information Technology Corporation
40	Documentum
41	CIESIN
42	SRA Corporation
43	IBM - Government Systems
44	IBM - Research
45	Oracle Corporation
46	Isolation Systems, Ltd.
47	Memex
48	InTEXT Systems
49	Interstate Electronics Corporation
50	ConQuest Software, Inc.

Located in Ground Floor Foyer (Booths 51-66)

51	TextWise Company
52	Dun & Bradstreet Information Services
53	HNC Software, Inc.
54	SRI International
55	SecureWare, Inc.
56	Verity, Inc.
57	National Software Testing Laboratories
58	Professional Book Group
59	DATAPRO
60	DRI
61	TRW
62	Tippecanoe Systems, Inc.
63	The Faxon Company, Inc.
64	Collins Computer Consulting, Inc.
65	Individual, Inc.
66	Library of Congress

Located in First Floor Foyer (Booths 67 - 74)

67	Lightburn & Associates, Inc.
68	CALCOMP, Inc.
69	Microsoft
70	Aviation Week Group
71	WANG
72	Worldwide Government Directories, Inc.
73	Xyvision, Inc.
74	AUSPEX Systems, Inc.

**LIST OF
ATTENDING
ORGANIZATIONS**

(This list contains only organizations and the addresses.)

List of Attending Organizations

Organization	Phone	Address	City, State Zip
1. Access Innovations, Inc.	505-265-3591	P.O. Box 40130	Albuquerque, NM 87196
2. Air Force Information Warfare Center	210-977-4048	Suite 315, 102 Hall Boulevard	San Antonio, TX 78243-7016
3. Architecture Technology Corporation	612-935-2035	Suite 300, 11800 Singletree Lane	Eden Prairie, MN 55344
4. Architecture Technology Corporation	612-935-2035	P.O. Box 24344	Minneapolis, MN 55424
5. Architect Software, Inc.	415-934-3617	Suite 300, 2700 Garcia Avenue	Mountain View, CA 94043
6. Argus Systems Group, Inc.	613-692-0709	Suite 301, 1776 E. Washington Street	Urbana, IL 61801
7. Armed Forces Medical Intelligence Center	301-619-3841	Building 1607, Ft. Detrick	Frederick, MD 21702
8. ARPA/SISTO	703-696-2220	3701 N. Fairfax Drive	Arlington, VA 22203
9. Assistant Secretary of the Air Force (Acquisition)	703-602-9200	Directorate of Science and Technology, 1919 S. Eads Street, Ste. 100	Arlington, VA 22202-3053
10. AT&T	910-279-6987	P.O. Box 20046	Greensboro, NC 27420
11. AT&T Government Markets	301-608-4476	8403 Colesville Road	Silver Spring, MD 20910
12. Auspex Systems, Inc.	703-904-7711	Suite 207, 1930 Isaac Newton Square	Reston, VA 22090
13. Aviation Week Group	202-383-2399	1200 G Street, NW, Suite 200	Washington, DC 20005-3850
14. Battelle	614-424-3811	505 King Avenue	Columbus, OH 43201
15. Battelle PNL	509-375-3705	P.O. Box 999	Richland, WA 99352
16. BBN Systems and Technologies	617-873-3634	70 Fawcett Street	Cambridge, MA 02138
17. BBN Systems and Technologies	410-290-5000	9810 Patuxent Woods Drive	Columbia, MD 21046
18. CALCOMP, Inc.	804-460-0085	1704 Cabriole Mews	Virginia Beach, VA 23455
19. Cambridge Parallel Processing	301-948-5256	Suite 100, 19900 Hamil Circle	Montgomery Village, MD 20879-5651
20. Cambridge Parallel Processing	513-426-7014	4403 Dayton-Xenia Road	Dayton, OH 45432
21. CENDI	615-481-0388	P.O. Box 4219, 152 Ridgeway Center	Oak Ridge, TN 37831
22. CIA	703-482-1100		Washington, DC 20505
23. CIESIN	202-775-6617	Suite 200, 1747 Pennsylvania Avenue	Washington, DC 20006
24. CIO	301-688-3041	NSA, 9800 Savage Road	Ft. Meade, MD 20755-6000
25. Claritech Corporation	412-621-0570	Suite 200, 319 S. Craig Street	Pittsburgh, PA 15213
26. Collins Computer Consulting, Inc.	301-924-0800	4408 Norbeck Road	Rockville, MD 20853
27. ConQuest Software, Inc.	410-740-8800	Suite 800, 10440 Little Patuxent Parkway	Columbia, MD 21044
28. COSPO	703-281-8904	Plaza A, Room 2N37	Washington, DC 20505
29. Crime & Narcotics Center	703-874-5098	Community Coordination Group, 224 Springloch Road	Silver Spring, MD 20904
30. Data Integration, Inc.	310-313-9152	Suite 305, 11965 Venice Blvd.	Los Angeles, CA 90066
31. Data Times	405-749-3038	Suite 450, 14000 Quail Springs Parkway	Oklahoma City, OK 731302
32. DataPro Information Services Group	609-764-2868	600 Delran Parkway	Delran, NJ 08075
33. David Samoff Research Center	609-951-0150	National Information Display Laboratory, PO Box 8619	Princeton, NJ 0853-8619
34. Defense Intelligence Agency	202-373-4005	Bolling AFB	Washington, DC 20340-5000
35. Defense Mapping Agency - Systems Center	301-227-2502	DMAASC Stop D-84, 4600 Sangamore Road	Bethesda, MD 20816-5003
36. Defense Technical Information Center	703-274-6800	Cameron Station	Alexandria, VA 22304-6145
37. Department of Defense Office of the Secretary	703-695-2396	C31, Rm. 3E194, OSD/C31 Pentagon	Washington, DC 20301
38. Department of Energy	202-586-6034	Rm. GA 301, NN-30, 1000 Independence Avenue	Washington, DC 20585
39. Department of Energy	615-576-1157	Office of Scientific & Technical Info, P.O. Box 62	Oak Ridge, TN 37831
40. Department of Justice	202-514-5719	Room B-311, 9th & Constitution Avenue, NW	Washington, DC 20530
41. Department of State	202-647-7549	Bureau of Intelligence & Research, 2200 C Street, NW	Washington, DC 20520-6510

List of Attending Organizations

Organization	Phone	Address	City, State Zip
42. Department of the Interior	703-648-7077	U.S. Geological Survey, 807 National Center	Reston, VA 22092
43. Department of the Treasury	202-622-0990	Library, Room 5310, 1500 Pennsylvania Avenue, NW	Washington, DC 20220
44. Department Research & Engineering	703-697-9215	Room 3D129, 3080 Defense Pentagon	Washington, DC 20301-3080
45. Desktop Data, Inc.	202-331-2020	Suite 400, 1129 20th Street, NW	Washington, DC 20036
46. Dialog-Knight Ridder Information, Inc.	703-908-2391	Suite 650, 1525 Wilson Blvd.	Arlington, VA 22209
47. Documentum	201-845-5300	4683 Chabot Drive	Pleasanton, CA 94588-2748
48. DRI (McGraw-Hill)	202-383-3621	10th Floor, 1200 G Street, NW	Washington, DC 20005-3814
49. Dun & Bradstreet Information Services	703-845-2734	Suite 2501, 5107 Leesburg Pike	Falls Church, VA 22041
50. DynCorp	703-998-3718	Suite 300, 4401 Ford Avenue	Alexandria, VA 22302
51. E-Systems	703-352-0300	Suite 500, 11320 Random Hills Road	Fairfax, VA 22030-7408
52. East View Publications, Inc.	612-550-0961	3020 Harbor Lane North	Minneapolis, MN 55447
53. Energy Information Administration	202-586-6162	El-60, Forrestal Building	Washington, DC 20585
54. ERIM	313-994-1200	P.O. Box 134001	Ann Arbor, MI 48113-4001
55. Excalibur Technologies	703-790-2110	Intell-DOE, 2000 Corporate Ridge	McLean, VA 22102
56. Federal Bureau of Investigation	202-324-4696	Room 1B045, 10th & Pennsylvania Avenues, NW	Washington, DC 20535
57. FEMA	202-646-3083	500 C Street, SW	Washington, DC 20472
58. Fermi National Accelerator Laboratory	708-840-3203	M/S 200, P.O. Box 500	Batavia, IL 60510
59. FJV Company, Inc.	703-271-5988	P.O. Box 187	Arlington, VA 22210
60. Foreign Broadcast Information Service	703-733-5845	P.O. Box 2604	Washington, DC 20013
61. Gemini Computers, Inc.	408-373-8500	P.O. Box 222417	Carmel, CA 93922-2417
62. GTE GSC	703-313-6974	Suite 810, 6564 Loisdale Court	Springfield, VA 22150
63. HNC Software, Inc.	619-546-8877	5930 Cornerstone Court W.	San Diego, CA 92121-3728
64. Hughes Information Technology Corp.	703-827-6635	Suite 500, 1577 Spring Hill Road	Vienna, VA 22182
65. HW USSOUTHCOM/J2	011-507-82-3369		APO AA 34003
66. Illustra Information Technologies	510-652-8000	1111 Broadway, Suite 2000	Oakland, CA 94607
67. Illustra Information Technologies	301-937-6245	3914 Stoconga Drive	Beltsville, MD 20705
68. In-Text Systems	415-391-5290	Suite 450, 120 Montgomery Street	San Francisco, CA 94104
69. Individual, Inc.		8 New England Executive Park West	Burlington, MA 01803
70. Information Access Systems, Inc.	303-442-6224	3085 Bluff Street	Boulder, CO 80301
71. Information Dimensions, Inc.	614-761-7292	5080 Tuttle Crossing Blvd.	Dublin, OH 43017
72. Intel Systems Security	703-482-9584		Washington, DC 20505
73. Interleaf, Inc.	301-982-0991	Suite 460, 7833 Walker Drive	Greenbelt, MD 20770
74. Interstate Electronics Corporation	703-413-0400	Suite 905, 1735 Jefferson Davis Highway	Arlington, VA 22202
75. InTEXT Systems	415-391-5290	Suite 450, 120 Montgomery Street	San Francisco, CA 94104
76. Isolation Systems, Ltd.	416-231-1248	26 Six Point Road	Toronto, ON M8Z 2W9
77. Isolation Systems, Ltd.	201-930-1773	P.O. Box 384	Park Ridge, NJ 07656
78. J.G. Van Dyke & Associates, Inc.	703-354-4887	Suite 300, 5510 Cherokee Avenue	Alexandria, VA 22312
79. Jane's Information Group	703-683-3700	Suite 300, 1340 Braddock Place	Alexandria, VA 22314
80. Knight-Ridder Information, Inc.	703-908-2383	Suite 650, 1525 Wilson Boulevard	Arlington, VA 22209
81. Language Engineering Corporation	617-489-4000	385 Concord Avenue	Belmont, MA 02178
82. Lawrence Livermore National Laboratory	510-422-5002	NAI Directorate - MS L-389, P.O. Box 808	Livermore, CA 94551

List of Attending Organizations

Organization	Phone	Address	City, State Zip
83. LEXIS-NEXIS	202-857-9152	Suite 600, 1150 18th Street, N.W.	Washington, DC 20036
84. LEXIS-NEXIS	513-865-6800	P.O. Box 933	Dayton, OH 45401
85. Library of Congress	202-707-9903	Federal Research Division, 101 Independence Avenue, SE	Washington, DC 20540-5220
86. Library/Goddard Space Flight Center	301-286-9230	Code 252, Greenbelt Road	Greenbelt, MD 20771
87. Lightburn & Associates, Inc.	410-757-7323	792 Locust Circle	Arnold, MD 21012
88. Logicon, Inc.	703-486-3500	2100 Washington Boulevard	Arlington, VA 22204-5703
89. Loral Federal Systems	301-240-6668	700 N. Frederick Avenue	Gaithersburg, MD 20879
90. Los Alamos National Laboratory	505-667-0891	M/S M310, PO Box 1663	Los Alamos, NM 87545
91. Madge Networks	703-761-1245	Suite 525, 7926 Jones Branch Drive	McLean, VA 22102
92. Madge Networks, Inc.	408-955-0700	2310 North First Street	San Jose, CA 95131-1011
93. Marine Corps Intelligence Activity	703-784-5864	2033 Barnett Avenue	Quantico, VA 22134-5011
94. Memex Ltd.	44-13552-3380	2 Redwood Court, Peel Park, East Kilbride	G774 5PE, Scotland, UK
95. Missile and Space Intelligence Center	205-876-4532	DIA, ATTN: MSC-5	Redstone Arsenal, AL 35898-5500
96. MITRE Corporation	703-883-5213	7525 Colshire Drive	McLean, VA 22102
97. NAIC/DXLS	513-257-2695	Suite 9, 4115 Hebble Creek Road	Wright-Patterson, OH 45433-5613
98. NASA Headquarters - CASI	301-621-0315	800 Elkridge Landing Road	Linthicum Heights, MD 21090-2934
99. National Archives & Records Administration	301-713-6730	8601 Adelphi Road	College Park, MD 20740-6001
100. National Biological Service TechTrans Center	303-969-2590	12795 W. Alameda Parkway	Lakewood, CO 80127
101. National Ground Intelligence Center	804-980-7431	220 Seventh Street, NE	Charlottesville, VA 22902-5396
102. National Security Agency	301-688-7343	E3, 9800 Savage Road	Ft. Meade, MD 20755-6000
103. National Software Testing Lab (McGraw-Hill)	800-220-6785	Plymouth Corporate Center, 625 Ridge Pike	Conshohocken, PA 19428
104. National Technical Information Service	703-487-4674	Room 302 Forbes, 5285 Port Royal Road	Springfield, VA 22161
105. NSTL	610-941-9600	625 Ridge Pike	Conshohocken, PA 19428
106. ODTUSD(P)/PS/PAD	703-697-5495	Room 2C468, The Pentagon	Washington, DC 20301-2200
107. Office of Naval Intelligence (ONI-3)	301-669-5326	4251 Suitland Road	Washington, DC 20395-5720
108. Office of the Deputy Chief of Staff for Intelligence	703-695-5300	HQDA DAMI-ST, 1000 Army Pentagon	Washington, DC 20310-1000
109. Open Text Corporation	703-749-7709	7th Floor, 2010 Corporate Ridge Road	McLean, VA 22102
110. Open Vision Technologies, Inc.	617-374-2227	Suite 406, 8375 Leesburg Pike	Vienna, VA 22182
111. Oracle Corporation	703-708-6774	196 Van Buren Street	Herndon, VA 22070
112. Oracle Corporation	301-907-2311	3 Bethesda Metro Center	Bethesda, MD 20814
113. OSS, Inc.	703-242-1700	11005 Langton Arms Court	Oakton, VA 22124-1807
114. Oxford Analytica, Inc.	202-739-0290	Suite 600, 1501 M Street, N.W.	Washington, DC 20005
115. Parcel, Inc.	818-666-6688	Suite 650, 80 S. Lake Avenue	Pasadena, CA 91101
116. Paralon Technologies, Inc.	206-641-8338	Suite 210, 3650 131st Avenue, SE	Bellevue, WA 98006
117. PC Guardian	415-459-0190	1133 E. Francisco Blvd.	San Rafael, CA 94901
118. Program Executive Office, Tactical Missiles	205-842-0358	ATTN: SFAE-MSL-I	Redstone Arsenal, AL 35898-8000
119. Raptor Systems, Inc.	703-761-6703	Suite 500, 8300 Boone Blvd.	Vienna, VA 22182
120. RTA Corporation	703-455-9513	7501 Maritime Lane	Springfield, VA 22153
121. SAIC	703-578-2486	5107 Leesburg Pike, Skyline 5, Suite 708	Falls Church, VA 22041
122. SandPoint Company, L.L.C.	617-441-2242	One Canal Park	Cambridge, MA 02141
123. Secure Computing Corp.	703-758-6723	Suite 400, 1801 Robert Fulton Drive	Reston, VA 22091

List of Attending Organizations

Organization	Phone	Address	City, State Zip
124. Secure Computing Corp.	301-530-0651	2675 Longlake Road	Roseville, MN 55113
125. SecureWare, Inc.	404-315-6296	Suite 200, 2957 Clairmont Road	Atlanta, GA 30329-1647
126. Spadaro & Associates	703-536-3636	4634 N. 38th Street	Arlington, VA 22207-4331
127. Spyglass, Inc.	708-505-1010	Suite 304, 1230 East Diehl Road	Naperville, IL 60563
128. SRA Corporation	703-558-7843	2000 15th Street North	Arlington, VA 22201
129. SRI International	415-859-2229	333 Ravenswood Avenue	Menlo Park, CA 94025
130. TASC	703-834-5000	12100 Sunset Hills Road	Reston, VA 22090
131. TextWise	716-244-4738	265 Warren Avenue	Rochester, NY 14618
132. TextWise	315-443-4693	2-212 Center for Science & Technology	Syracuse, NY 13244-4100
133. The Faxon Company, Inc.	617-662-4043	Suite 550, 485 Spring Park Place	Herndon, VA 22070
134. The McGraw-Hill, Professional Book Group	212-337-5020	11 West 19th Street	New York, NY 10011
135. The RTA Corporation	703-418-8411	3400 Jennings Chapel Road	Woodbine, MD 21797
136. The RTA Corporation	703-418-8411	P.O. Box 5267	Springfield, VA 22150-5267
137. Thinking Machines Corporation	703-918-9301	Suite 620, 8230 Leesburg Pike	Vienna, VA 22182
138. Tippecanoe Systems, Inc.	703-742-6945	1332 Deep Run Lane	Reston, VA 22090-3909
139. Tippecanoe Systems, Inc.	510-416-8510	Suite 119, 5674 Stoneridge Drive	Pleasanton, CA 94588
140. Titan Corporation	703-758-5600	1900 Campus Commons Drive	Reston, VA 22091
141. TRW Integrated Engineering Division	703-968-1146	One Federal Systems Park Drive	Fairfax, VA 22033
142. TRW/DTD	310-813-2553	One Space Park Drive	Redondo Beach, CA 90278
143. TRW/IED	703-204-8696	Suite 800, 2650 Park Tower Drive	Vienna, VA 22180
144. U.S. Customs Service	703-440-6251	7681 Boston Blvd.	Springfield, VA 22153
145. U.S. Geological Survey	703-648-7245	802 National Center	Reston, VA 22092
146. U.S. Postal Service	202-268-5448	475 L'Enfant Plaza, SW	Washington, DC 20260-2427
147. U.S. Secret Service	202-435-5649	Suite 1000, 1800 G Street, NW	Washington, DC 20223
148. U.S. Strategic Command	402-294-2347	Suite M1218, 901 SAC Blvd.	Offutt AFB, NE 68113-6200
149. U.S. Transportation Command	618-256-2889	Room 339, 508 Scott Drive	Scott AFB, IL 62225-5357
150. U.S.C.S.	703-440-6242	7681 Boston Blvd.	Springfield, VA 22153
151. US Agency for International Development	703-875-1326	1100-A SA-14	Washington, DC 20523-1407
152. USSTRATCOM/J6243	271-6895	Suite BF20, 901 SAC Blvd.	Offutt AFB, NE 68113
153. Verity, Inc.	703-734-1555	Suite 450, 1420 Springhill Road	McLean, VA 22102
154. Virtual Open Network Environment Corporation	301-881-2297	Suite 235, 12300 Twinbrook Parkway	Rockville, MD 20852
155. WANG	301-657-5592	Federal Systems Division, 7500 Old Georgetown Road	Bethesda, MD 20814-6198
156. Westinghouse Savannah River Co.	803-725-8484	Savannah River Site,	Aiken, SC 29808
157. Worldwide Government Directories, Inc.	301-718-8770	Suite 900, 7979 Old Georgetown Road	Bethesda, MD 20814
158. Xyvision	617-245-4100	101 Edgewater Drive	Wakefield, MA 01880
159. Xyvision	703-549-0121	901 North Pitt Street	Alexandria, VA 22314-1536

CROSS REFERENCE OF PRESENTERS & EXHIBITORS

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Logicon, Incorporated	73		
Madge Networks, Incorporated	132		
McGraw-Hill/Datapro Information			
Services Group	50		
Memex Limited	66		

**CONFERENCE
NOTES**

COSPO/CENDI
Industry Day Conference

NOTES

The first thing I noticed when I stepped
out of the plane was the beautiful
weather. The temperature was just
what I needed. The first thing I did
was to go to the hotel and check in.

The hotel was very nice and the
room was comfortable. I was
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